

What's the Evidence?

Cocoa for children with Tourette Syndrome

Key findings

- Cocoa is the name given to ground (processed) cacao beans used in chocolate food and drink products.
- We found no research studies that explored the effect of cocoa for children with Tourette Syndrome.
- Due to the lack of evidence and the high sugar, fat and calorie content of many cocoa products, we would caution against regularly incorporating them for medicinal purposes into children's diets.

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What were we asked?

We were asked whether there was any evidence that cocoa could have a calming effect on children with Tourette Syndrome.

What did we find?

Cocoa is the name given to ground (processed) cacao beans from the Theobroma Cacao tree used in chocolate food and drink products. As well as containing small amounts of potentially calming substances (magnesium and phenylethamine), cocoa also contains small amounts of potential stimulants (caffeine and theobromine).

We found no research studies that explored the effect of cocoa for children with Tourette Syndrome.

Biomedical research has focused on the high-flavanol (antioxidant) content of cocoa, with systematic reviews finding that the flavanols in cocoa may have the potential to slightly lower blood pressure.^{1,2} However, exactly how this might happen, and what amount to consume over what period, in order to have any helpful effect, has not been established.

Anecdotally, chocolate is thought to improve mood; but it is only recently that studies have started to explore this scientifically, and the potential for cocoa to improve cognitive functioning. Two recent studies have found it may have a positive effect on mood and lower stress levels^{3,4}, but overall the evidence is inconclusive.⁵

Research studies into the health effects of cocoa appear to be mostly small in size,

with healthy adult participants, and typically funded by chocolate manufacturers. This means it is difficult to establish the effects of cocoa on child health. Any adverse effects of cocoa products, such as heartburn, allergic reactions and gastrointestinal complaints⁶, also need to be explored further.

Cocoa has a naturally bitter taste; so only very small amounts (much smaller than used in the research studies) are generally used in commercially available products. Flavanol content is not listed on nutrition labels, but as they are only found in cocoa solids, you can get an idea from the percentage of cocoa solids in the product. It is also important to consider the other ingredients in cocoa products (e.g. sugar/sweeteners/preservatives) and what is being consumed along with the cocoa

We would like to hear your feedback on this summary – please email us at pencru@exeter.ac.uk if you have any comments or questions.

References

1. Ried, K., et al. (2012). Effect of Cocoa on Blood Pressure (Review). *Cochrane Database of Systematic Reviews*. Issue 8. Art No CD008893.
2. Desch, S., et al. (2010). Effect of Cocoa Products on Blood Pressure: Systematic Review and Meta-analysis. *American Journal of Hypertension*. 23 (1): 97 – 103.
3. Wirtz, P.H., et al. (2014). Dark Chocolate Intake Buffers Stress Reactivity in Humans. *J Am Coll Cardiol*
4. Pase M.P., et al. (2013). Cocoa Polyphenols Enhance Positive Mood States but not Cognitive Performance: A Randomized Placebo-Controlled Trial. *J Psychopharmacol* 27 (5): 451 – 8.
5. Sokolov, A.N., et al. (2013). Chocolate and the Brain: Neurobiological Impact of Cocoa Flavanols on Cognition and Behavior. *Neuroscience and Biobehavioral Reviews* 37: 2445 – 2453.

product, sometimes called the ‘food matrix’. For example, drinking milk while eating chocolate, may interfere with absorption.

What do we think?

Due to the lack of evidence and the high sugar, fat and calorie content of many cocoa products, we would caution against regularly incorporating them for medicinal purposes into children’s diets.

Signposts to other information

For further information or support with Tourette Syndrome, please visit:

www.nhs.uk/conditions/tourette-syndrome

www.tourettes-action.org.uk

6. Latif, R. (2013). Chocolate/Cocoa and Human Health: A Review. *The Netherlands Journal of Medicine* 71 (2): 63 – 68.

Note: the views expressed here are those of the Peninsula Cerebra Research Unit (PenCRU) at the University of Exeter Medical School and do not represent the views of the Cerebra charity, or any other parties mentioned. We strongly recommend seeking medical advice before undertaking any treatments/therapies not prescribed within the NHS