

Chocolate May Ease Migraines: Study

By Stephen Daniells, NutraIngredients-USA

Dietary supplements of cocoa may repress inflammatory responses in the brain linked to migraines, suggest results from an animal study.

Results from an animal study indicated that consuming a diet enriched with 10 percent cocoa increased levels of anti-inflammatory compounds in the brain as well as repressing levels of pro-inflammatory processes, scientists from Missouri State University have reported at the International Headache Society's (IHS) 14th International Headache Congress in Philadelphia.

"To our knowledge, this is first evidence for the use of cocoa as a dietary supplement to cause an upregulation of [anti-inflammatory proteins and cytokines] as well as repress expression of acute and chronic inflammatory responses within trigeminal ganglia," state the researchers in their conference abstract. The trigeminal ganglia which are thought to play a role in migraine.

"Importantly, our data also provide evidence that cocoa contains biologically active compounds that could be beneficial in the treatment of trigeminal-mediated diseases of the head and face."

Migraine stats

About 12 - 15 per cent of people in the UK, (around nine million people), suffer from migraines, with twice as many women as men affected by the complaint. In the US, about 36 million people suffer with migraine, more than either diabetes or asthma, according to the HIS.

The headaches are sometimes preceded by flashes of light, blind spots, tingling in the arms or legs, or anxiety. Sufferers generally experience a pounding sensation in one side of the head and many undergo nausea, vomiting, and extreme sensitivity to light and noise. The symptoms are often severe and debilitating, lasting anywhere between four and 72 hours.

Of mice and men

"Although this is an early animal study, it shows promise in helping researchers understand more about how migraine can be prevented and treated," said Michael Moskowitz, MD, President of the International Headache Society.

"So much more research is needed in understanding this devastating disease that robs millions of Americans of a productive quality of life."

Study details

The researchers used Sprague Dawley rats and fed them a control diet or isocaloric diets enriched with 1 or 10 per cent cocoa for 14 days. After two weeks of feeding, the mice

Continued...

were given an injection of capsaicin to produce an acute inflammatory response, or complete Freund's adjuvant (CFA), which produces a chronic inflammatory response.

Rats fed the control diet and injected with capsaicin or CFA expressed higher levels of the inflammatory proteins MAP kinases (MAPK), while supplementation with cocoa was found to suppress these increases, report the researchers.

Additionally, rats fed cocoa-enriched diets were found to have increased levels of the anti-inflammatory proteins MAP kinase phosphatases (MKP), compared to animals on the control diet. The cocoa-fed animals also have higher levels of the anti-inflammatory molecule IL-10 in their neurons.

“Cocoa enriched diets are able to repress the stimulated expression of proteins associated with the promotion and maintenance of inflammatory [...] responses,” concluded the researchers.

Source: *International Headache Society's 14th International Headache Congress* PO347

“Repression of acute and chronic inflammatory changes in trigeminal ganglion neurons and glia in response to cocoa enriched diets”

Source: R.J. Cady and P.L. Durham