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Unilever builds science to support microvascular benefits of theaflavins

By Stephen DANIELLS, 27-Jan-2015

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Capsules containing catechins from tea may 'moderately' boost microvascular function in healthy adults, says a new study from Unilever that supports the circulatory benefits of black tea.

Interest in tea and its constituents has bloomed in recent years, with the greatest focus on the leaf's polyphenol content. Green tea contains between 30 and 40% of water-extractable polyphenols, while black tea (green tea that has been oxidized by fermentation) contains between 3 and 10%. Oolong tea is semi-fermented tea and is somewhere between green and black tea.

Most of the studies have focused on green tea and its constituents, most notably EGCG. Theaflavins, on the other hand, are unique to black tea.

Scientists from Unilever Research & Development in Vlaardingen, The Netherlands and RVK Research & Consulting BVBA in Belgium report that a single dose of theaflavins may improve peripheral microcirculation in health subjects, with the effects described as 'modest'.

*"The present study was the first investigating the acute effects of black tea theaflavins on (micro-) vascular function, and we demonstrated that at a single dose of theaflavins improves microvascular reactive hyperemia," they wrote in *Nutrients*.*

"The observed effect size did not significantly differ from green tea-derived catechins, which is in line with the effects of black and green tea on endothelial function as described previously."

Study details

Led by Dagmar Fuchs, the researchers recruited 24 four healthy adults with an average age of 63 to participate in their double-blind, placebo-controlled, randomised, cross-over study. The volunteers underwent six separate tests, each time consuming a single dose of catechins (500 mg), four varying doses of theaflavins (100 to 500 mg) or placebo. Their microcirculation was then measured at time 0, and then again after two, four, and six hours.

Results showed that the 500 mg dose of theaflavins and catechins both improved microcirculation measures, compared to placebo. Improvements were also observed for the 300 mg dose of theaflavins, but the lower doses did not have any effect, they said.

Similarities and differences

"The study indicates that catechines and theaflavins may contribute to the vascular effects of green and black tea, respectively," wrote the researchers. *"The moderate effects suggest that other components in tea may also play a role in affecting vascular function."*

"Therefore, more research is required to explain why green tea and black tea show similar sized effects on vascular function despite the differences in composition."

"Due to the limited knowledge on the metabolism of theaflavins the current explorative study has some limitations," they noted.

"Microbial metabolites of theaflavins may have been formed, appearing in the blood after the vascular measurements. Effects of these metabolites as well as effects of theaflavins after chronic consumption were not addressed in the current acute study design."

Source: *Nutrients*

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"Effect of Tea Theaflavins and Catechins on Microvascular Function"

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