Green tea or rosemary extract added to foods reduces nonheme-iron absorption - DTU Orbit (11/02/2019)

**Green tea or rosemary extract added to foods reduces nonheme-iron absorption**

**Background:** Phenolic compounds act as food antioxidants. One of the postulated mechanisms of action is chelation of prooxidant metals, such as iron. Although the antioxidative effect is desirable, this mechanism may impair the utilization of dietary iron.

**Objective:** We sought to determine the effect of phenolic-rich extracts obtained from green tea or rosemary on nonheme-iron absorption.

**Design:** Young women aged 19-39 y consumed test meals on 4 separate occasions. The meals were identical except for the absence (meal A) or presence (meal B) of a phenolic-rich extract from green tea (study 1; n = 10) or rosemary (study 2; n = 14). The extracts (0.1 mmol) were added to the meat component of the test meals. The meals were extrinsically labeled with either Fe-55 or Fe-59 and were consumed on 4 consecutive days in the order ABBA or BAAB. Iron absorption was determined by measuring whole-body retention of 59Fe and the ratio of Fe-55 to 59Fe activity in blood samples.

**Results:** The presence of the phenolic-rich extracts resulted in decreased nonheme-iron absorption. Mean (+/-SD) iron absorption decreased from 12.1 +/- 4.5% to 8.9 +/- 5.2% (P < 0.01) in the presence of green tea extract and from 7.5 +/- 4.0% to 6.4 +/- 4.7% (P < 0.05) in the presence of rosemary extract.

**Conclusion:** Phenolic-rich extracts used as antioxidants in foods reduce the utilization of dietary iron.

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