Green tea or rosemary extract added to foods reduces nonheme-iron absorption - DTU Orbit (01/01/2019)

**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.

**General information**
State: Published
Organisations: Enzyme and Protein Chemistry, Department of Systems Biology
Contributors: Samman, S., Sandstrøm, B., Toft, M., Bukhave, K., Jensen, M., Sørensen, S., Hansen, M.
Pages: 607-612
Publication date: 2001
Peer-reviewed: Yes

**Publication information**
Journal: American Journal of Clinical Nutrition
Volume: 73
Issue number: 3
ISSN (Print): 0002-9165
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 5.62 SJR 3.438 SNIP 2.191
Web of Science (2017): Impact factor 6.549
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.97 SJR 3.782 SNIP 2.325
Web of Science (2016): Impact factor 6.926
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 5.87 SJR 3.899 SNIP 2.394
Web of Science (2015): Impact factor 6.703
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 5.71 SJR 3.853 SNIP 2.385
Web of Science (2014): Impact factor 6.77
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 6.38 SJR 4.055 SNIP 2.58
Web of Science (2013): Impact factor 6.918
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 6.05 SJR 3.744 SNIP 2.432
Web of Science (2012): Impact factor 6.504
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 6.23 SJR 3.607 SNIP 2.467
Web of Science (2011): Impact factor 6.669
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.307 SNIP 2.234
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.25 SNIP 2.453
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 3.346 SNIP 2.259
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 3.39 SNIP 2.497
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 3.245 SNIP 2.397
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.829 SNIP 2.36
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 2.57 SNIP 2.45
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 2.664 SNIP 2.594
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 2.33 SNIP 2.549
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 2.283 SNIP 2.21
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.771 SNIP 2.185
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.799 SNIP 1.941
Original language: English
Source: orbit
Source-ID: 45900
Research output: Research - peer-review > Journal article – Annual report year: 2001