Increasing the cooking temperature of meat does not affect nonheme iron absorption from a phytate-rich meal in women

The effect of increasing cooking temperatures of meat on nonheme iron absorption from a composite meal was investigated. Cysteine-containing peptides may have a role in the iron absorption enhancing effect of muscle proteins. Heat treatment can change the content of sulfhydryl groups produced from cysteine and thereby affect iron absorption. Twenty-one women (25 +/- 3 y) were served a basic meal without meat and two other meals consisting of the basic meal plus 75 g of pork meat cooked at 70, 95 or 120 degreesC. The meals were extrinsically labeled with Fe-55 or Fe-59. Iron absorption was determined from measurements of wholebody Fe-59 retention and the activity of Fe-55 and Fe-59 in blood samples. Nonheme iron absorptions were 0.9 (0.5-4.0)% (P = 0.06), 0.7 (0.4-3.9)% (P = 0.1) and 2.0 (1.3-3.1)% (P <0.001) greater when meat cooked at 70, 95 or 120 degreesC, respectively, was added to the basic meal. Increasing the cooking temperature of meat did not impair nonheme iron absorption compared with cooking at 70 degreesC. Because the cysteine content of meat decreased with increasing cooking temperature, this argues against a specific contribution of sulfhydryl groups from cysteine residues in the promotion of nonheme iron absorption by meat proteins.

General information
State: Published
Organisations: Enzyme and Protein Chemistry, Department of Systems Biology
Contributors: Baech, S., Hansen, M., Bukhave, K., Kristensen, L., Jensen, M., Sørensen, S., Purslow, P., Skibsted, L., Sandstrøm, B.
Pages: 94-97
Publication date: 2003
Peer-reviewed: Yes

Publication information
Journal: Journal of Nutrition
Volume: 133
Issue number: 1
ISSN (Print): 0022-3166
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 4.24 SJR 2.191 SNIP 1.395
Web of Science (2017): Impact factor 4.398
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.93 SJR 2.025 SNIP 1.336
Web of Science (2016): Impact factor 4.145
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 4.08 SJR 2.107 SNIP 1.517
Web of Science (2015): Impact factor 3.74
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.13 SJR 2.121 SNIP 1.581
Web of Science (2014): Impact factor 3.875
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 4.6 SJR 2.15 SNIP 1.615
Web of Science (2013): Impact factor 4.227
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 4.45 SJR 1.94 SNIP 1.657
Web of Science (2012): Impact factor 4.196
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 4.32 SJR 1.908 SNIP 1.6
Web of Science (2011): Impact factor 3.916
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.729 SNIP 1.569
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.572 SNIP 1.542
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.592 SNIP 1.41
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.599 SNIP 1.477
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.724 SNIP 1.565
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.534 SNIP 1.399
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.443 SNIP 1.459
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.414 SNIP 1.569
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.422 SNIP 1.544
Scopus rating (2001): SJR 1.109 SNIP 1.359
Scopus rating (2000): SJR 0.915 SNIP 1.321
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.881 SNIP 1.18
Original language: English
Source: orbit
Source-ID: 46094
Research output: Research - peer-review ; Journal article – Annual report year: 2003