Apple pomace improves gut health in Fisher rats independent of seed content
The mechanism behind the cholesterol lowering effects of apple pomace, a polyphenol- and fibre rich by-product in apple juice production, was investigated. Groups of male F344 rats were fed a control feed or the same feed with 2.1% or 6.5% dry apple pomace with or without seeds for 4 weeks. Effects on plasma cholesterol concentrations, excretion of bile acids, expression of genes involved in cholesterol- and bile acid synthesis, and other markers related to gut health were investigated. We found that pomace feeding decreased total-, LDL- and IDL-cholesterol concentrations compared to control. Higher production of SCFA, indicating elevated caecal fermentation, and increased excretion of total- and primary bile acids could explain the observed hypocholeolemic effects of apple pomace, however, expression of selected genes involved in cholesterol and bile acid biosynthesis (Hmgcr and Cyp7a1) were not affected. We found no hepatotoxic or other effects of apple seeds. Altogether, our results indicate that apple pomace has beneficial effects on gut health, and that the cholesterol-lowering effect is linked to increased production of SCFA and excretion of bile acids. These effects are most likely linked to the fibre and other fruit constituents present in the pomace. Presence of apple seeds seems to impart no toxicity even at 6.5% pomace in the feed and seeds also had no influence on the biological effect of the pomace. In the future, apple pomace could potentially be used as a bioactive and possibly health promoting food ingredient.

General information
State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit, Division of Risk Assessment and Nutrition, University of Copenhagen, Lodz University of Technology, Research Institute of Horticulture
Pages: 2931-2941
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Food & Function
Volume: 9
ISSN (Print): 2042-6496
Ratings:
Web of Science (2018): Indexed yes
Scopus rating (2017): CiteScore 3.62 SJR 1.209 SNIP 1.07
Web of Science (2017): Impact factor 3.289
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 3.38 SJR 1.131 SNIP 1.024
Web of Science (2016): Impact factor 3.247
Scopus rating (2015): CiteScore 3.15 SJR 1.013 SNIP 0.999
Web of Science (2015): Impact factor 2.686
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 3.04 SJR 1.022 SNIP 1.072
Web of Science (2014): Impact factor 2.791
Are wild and cultivated flowers served in restaurants or sold by local producers in Denmark safe for the consumer?

New Nordic Food has within the last decade received much media coverage with chefs of top restaurants using wild plants for foods. As part of a control campaign, the Danish Veterinary and Food Administration visited 150 restaurants and local food producers from May-October 2016 and investigated their use of plants picked from the wild, cultivated in private gardens or market gardens. Among the species used were the flowers from 23 plants. Here we present a safety evaluation of these flowers based on published phytochemical investigations and toxicological data in humans, farm animals, pets, or experimental animals. Of the 23 flowers reviewed, nine contained compounds with toxic or potentially toxic effects if eaten, two contained unidentified toxic compound(s), and four were flowers from plants with potentially toxic compounds present in other plant parts or related species. Many of the flowers may be considered novel, since a use to a significant degree in Europe prior to 15 May 1997 before Regulation (EC) 258/97 on novel food and novel food ingredients came into force could not be established. In conclusion, this review illuminates a striking lack of chemical and toxicological data of many of the proposed wild or cultivated flowers for food use.

General information
State: Published
Organisations: National Food Institute, Division of Risk Assessment and Nutrition, Research Group for Risk-Benefit
Contributors: Egebjerg, M. M., Olesen, P. T., Eriksen, F. D., Ravn-Haren, G., Bredsdorff, L., Pilegaard, K.
Pages: 129-142
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Food and Chemical Toxicology
Volume: 120
ISSN (Print): 0278-6915
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.99 SJR 1.144 SNIP 1.427
Web of Science (2017): Impact factor 3.977
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.96 SJR 1.351 SNIP 1.58
Web of Science (2016): Impact factor 3.778
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.44 SJR 1.202 SNIP 1.415
Web of Science (2015): Impact factor 3.584
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.12 SJR 1.038 SNIP 1.369
Web of Science (2014): Impact factor 2.895
Extensive literature search for studies related to fumonisins and their modified forms

The present document has been produced and adopted by the bodies identified above as authors. This task has been carried out exclusively by the authors in the context of a contract between the European Food Safety Authority and the authors, awarded following a tender procedure. The present document is published complying with the transparency principle to which the Authority is subject. It may not be considered as an output adopted by the Authority. The European Food Safety Authority reserves its rights, view and position as regards the issues addressed and the conclusions reached in the present document, without prejudice to the rights of the authors.
Genetic polymorphism in selenoprotein P modifies the response to selenium-rich foods on blood levels of selenium and selenoprotein P in a randomized dietary intervention study in Danes

Background: Selenium is an essential trace element and is suggested to play a role in the etiology of a number of chronic diseases. Genetic variation in genes encoding selenoproteins, such as selenoprotein P and the glutathione peroxidases, may affect selenium status and, thus, individual susceptibility to some chronic diseases. In the present study, we aimed to (1) investigate the effect of mussel and fish intake on glutathione peroxidase enzyme activity and (2) examine whether single nucleotide polymorphisms in the GPX1, GPX4, and SELENOP genes modify the effect of mussel and fish intake for 26 weeks on whole blood selenium, plasma selenoprotein P concentrations, and erythrocyte GPX enzyme activity in a randomized intervention trial in Denmark. Results: CC homozygotes of the SELENOP/rs3877899 polymorphism who consumed 1000 g fish and mussels per week for 26 consecutive weeks had higher levels of both selenoprotein P (difference between means - 4.68 ng/mL (95% CI - 8.49, - 0.87)) and whole blood selenium (difference between means - 5.76 (95% CI - 12.5, 1.01)) compared to fish and mussel consuming T-allele carriers although the effect in whole blood selenium concentration was not statistically significant. Conclusions: Our study indicates that genetically determined variation in SELENOP leads to different responses in expression of selenoproteins following consumption of selenium-rich foods. This study also emphasizes the importance of taking individual aspects such as genotypes into consideration when assessing risk in public health recommendations.
Recent findings show that cerium oxide (CeO2) nanoparticles may undergo in vivo-induced size transformation with the formation of smaller particles that could result in a higher translocation following pulmonary exposure compared to virtually insoluble particles, like titanium dioxide (TiO2). Therefore, we compared liver deposition of CeO2 and TiO2 nanoparticles of similar primary sizes 1, 28 or 180 days after intratracheal instillation of 162 μg of NPs in female C57BL/6 mice. Mice exposed to 162 μg CeO2 or TiO2 nanoparticles by intravenous injection or oral gavage were included as reference groups to assess the amount of NPs that reach the liver bypassing the lungs and the translocation of NPs from the gastrointestinal tract to the liver, respectively. Pulmonary deposited CeO2 nanoparticles were detected in the liver 28 and 180 days post-exposure and TiO2 nanoparticles 180 days post-exposure as determined by darkfield imaging and by the...
quantification of Ce and Ti mass concentration by inductively coupled plasma-mass spectrometry (ICP-MS). Ce and Ti concentrations increased over time and 180 days post-exposure the translocation to the liver was 2.87 ± 3.37% and 1.24 ± 1.98% of the initial pulmonary dose, respectively. Single particle ICP-MS showed that the size of CeO$_2$ nanoparticles in both lung and liver tissue decreased over time. No nanoparticles were detected in the liver following oral gavage. Our results suggest that pulmonary deposited CeO$_2$ and TiO$_2$ nanoparticles translocate to the liver with similar calculated translocation rates despite their different chemical composition and shape. The observed particle size distributions of CeO$_2$ nanoparticles indicate in vivo processing over time both in lung and liver. The fact that no particles were detected in the liver following oral exposure showed that direct translocation of nanoparticles from lung to the systemic circulation was the most important route of translocation for pulmonary deposited particles.

**General information**
State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit, Department of Micro- and Nanotechnology, Research Group for Nano-Bio Science, National Research Centre for the Working Environment
Publication date: 2018
Peer-reviewed: Yes

**Publication information**
Journal: P L o S One
Volume: 13
Issue number: 8
Article number: e0202477
ISSN (Print): 1932-6203
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.01 SJR 1.164 SNIP 1.111
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.11 SJR 1.236 SNIP 1.101
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.32 SJR 1.427 SNIP 1.136
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.54 SJR 1.559 SNIP 1.148
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.94 SJR 1.772 SNIP 1.153
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 4.15 SJR 1.982 SNIP 1.156
Web of Science (2012): Impact factor 3.73
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 4.58 SJR 2.425 SNIP 1.233
Web of Science (2011): Impact factor 4.092
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.705 SNIP 1.178
Web of Science (2010): Impact factor 4.411
Web of Science (2010): Indexed yes
Meeting the challenges in the development of risk-benefit assessment of foods

Background
Risk-benefit assessment (RBA) of foods aims to assess the combined negative and positive health effects associated with food intake. RBAs integrate chemical and microbiological risk assessment with risk and benefit assessment in nutrition.

Scope and Approach
Based on the past experiences and the methodological differences between the underlying research disciplines, this paper aims to describe the recent progress in RBAs, identifying the key challenges that need to be addressed for further development, and making suggestions for meeting these challenges.

Key Findings and Conclusions
Ten specific challenges are identified and discussed. They include the variety of different definitions and terminologies used in the underlying research disciplines, the differences between the “bottom-up” and the “top-down” approaches and the need for clear risk-benefit questions. The frequent lack of data and knowledge with their consequential uncertainties is considered, as well as the imbalance in the level of scientific evidence associated with health risks and benefits. The challenges that are consequential to the need of considering substitution issues are discussed, as are those related to the inclusion of microbiological hazards. Further challenges include the choice of the integrative health metrics and the potential scope of RBAs, which may go beyond the health effect. Finally, the need for more practical applications of RBA is stressed. Suggestions for meeting the identified challenges include an increased interdisciplinary consensus, reconsideration of methodological approaches and health metrics based on a categorisation of risk-benefit questions, and the performance of case studies to experience the feasibility of the proposed approaches.

General information
State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit
Contributors: Nauta, M., Andersen, R., Pilegaard, K., Pires, S. M., Ravn-Haren, G., Tetens, I., Poulsen, M.
Pages: 90-100
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Trends in Food Science and Technology
Volume: 76
ISSN (Print): 0924-2244
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 6.67 SJR 2.344 SNIP 2.444
Web of Science (2017): Impact factor 6.609
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6 SJR 2.357 SNIP 2.775
Web of Science (2016): Impact factor 5.191
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 5.51 SJR 2.232 SNIP 2.626
Web of Science (2015): Impact factor 5.15
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 5.17 SJR 2.173 SNIP 2.767
Web of Science (2014): Impact factor 4.651
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 4.83 SJR 2.216 SNIP 2.653
Web of Science (2013): Impact factor 4.651
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 3.91 SJR 2.048 SNIP 2.417
Web of Science (2012): Impact factor 4.135
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 3.81 SJR 1.897 SNIP 2.675
Web of Science (2011): Impact factor 3.672
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.763 SNIP 2.508
Web of Science (2010): Impact factor 3.71
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.187 SNIP 2.567
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.75 SNIP 2.321
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.682 SNIP 2.279
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.17 SNIP 2.065
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.041 SNIP 1.948
Scopus rating (2004): SJR 1.069 SNIP 1.948
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.74 SNIP 1.479
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.882 SNIP 1.55
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.97 SNIP 1.52
Scopus rating (2000): SJR 1.207 SNIP 1.906
Scopus rating (1999): SJR 1.085 SNIP 1.605
Original language: English
Electronic versions:
ANSAN_1_s2.0_S0924224416305775_main.pdf
1_s2.0_S0924224416305775_main.pdf
DOIs:
10.1016/j.tifs.2018.04.004
Source: FindIt
Source-ID: 2419152119
Research output: Research - peer-review : Review – Annual report year: 2018
Primary genotoxicity in the liver following pulmonary exposure to carbon black nanoparticles in mice

Background
Little is known about the mechanism underlying the genotoxicity observed in the liver following pulmonary exposure to carbon black (CB) nanoparticles (NPs). The genotoxicity could be caused by the presence of translocated particles or by circulating inflammatory mediators released during pulmonary inflammation and acute-phase response. To address this, we evaluated induction of pulmonary inflammation, pulmonary and hepatic acute-phase response and genotoxicity following exposure to titanium dioxide (TiO2), cerium oxide (CeO2) or CB NPs. Female C57BL/6 mice were exposed by intratracheal instillation, intravenous injection or oral gavage to a single dose of 162 μg NPs/mouse and terminated 1, 28 or 180 days post-exposure alongside vehicle control.

Results
Liver DNA damage assessed by the Comet Assay was observed after intravenous injection and intratracheal instillation of CB NPs but not after exposure to TiO2 or CeO2. Intratracheal exposure to NPs resulted in pulmonary inflammation in terms of increased neutrophils influx for all NPs 1 and 28 days post-exposure. Persistent pulmonary acute phase response was detected for all NPs at all three time points while only a transient induction of hepatic acute phase response was observed. All 3 materials were detected in the liver by enhanced darkfield microscopy up to 180 days post-exposure. In contrast to TiO2 and CeO2 NPs, CB NPs generated ROS in an acellular assay.

Conclusions
Our results suggest that the observed hepatic DNA damage following intravenous and intratracheal dosing with CB NPs was caused by the presence of translocated, ROS-generating, particles detected in the liver rather than by the secondary effects of pulmonary inflammation or hepatic acute phase response.

General information
State: Published
Number of pages: 12
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Particle and Fibre Toxicology
Volume: 15
Issue number: 2
ISSN (Print): 1743-8977
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 8.15 SJR 2.253 SNIP 1.638
Web of Science (2017): Impact factor 6.105
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 9.4 SJR 2.755 SNIP 2.144
Web of Science (2016): Impact factor 8.577
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 8.84 SJR 3.074 SNIP 2.023
Web of Science (2015): Impact factor 8.649
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 6.94 SJR 2.411 SNIP 1.86
Web of Science (2014): Impact factor 7.113
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 8.5 SJR 2.857 SNIP 2.552
Web of Science (2013): Impact factor 6.987
Safety evaluation of plants collected from the wild served as food in Danish restaurants

Within the last decade the New Nordic Cuisine has received much media coverage. The restaurants have focused on increased use of locally grown plant food, including wild plants collected from the countryside. In addition, many cookbooks and guided nature walks have assisted interested consumers in the search for wild plants for culinary purposes. As part of a control campaign running from May–October 2016, the Danish food authorities investigated the use of plants picked from the wild, cultivated in private gardens or market gardens in restaurants and local food producers.

Here we present examples of safety evaluations of some of the 50 plant species identified from this campaign based on...
published phytochemical investigations and toxicological data in humans. In the period from February to October, 2017, searches were performed in databases on bibliographic information using the preferred scientific name, and if relevant also synonyms. The full scientific papers were obtained if abstracts described ethnomedical studies on food use in European countries prior to 15 May 1997 (the date the first novel food regulation came into force), constituents (especially if toxicological relevant), experimental laboratory animal studies on the toxicological effects of the plants, or cases of intoxications in humans or animals exposed to the individual plants. For the majority of the plants no or very limited phytochemical and safety information were available. Additionally, we found that of the 50 plants reviewed almost half contained compounds with toxic or potentially toxic effects if eaten. For many of the remaining plants, the data was insufficient to establish a safe edible amount. Many of the species may be considered novel food according to the EU regulation, since a food use to a significant degree in EU member states prior to 15 May 1997 could not be established. This review has demonstrated a strong need for better information on novel food status and safety of plants picked from the wild or plants previously mainly cultivated e.g. for ornamental use but now introduced as food, so that food producers, chefs and writers of cookbooks also in future have a stronger attention on whether the plants are safe to eat.

General information
State: Published
Organisations: National Food Institute, Division of Risk Assessment and Nutrition, Research Group for Risk-Benefit
Pages: S140-S140
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Toxicology Letters
Volume: 295
Issue number: Suppl. 1
Article number: P10-06
ISSN (Print): 0378-4274
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.41 SJR 1.103 SNIP 1.025
Web of Science (2017): Impact factor 3.166
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.83 SJR 1.302 SNIP 1.201
Web of Science (2016): Impact factor 3.858
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.62 SJR 1.281 SNIP 1.117
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.45 SJR 1.142 SNIP 1.154
Web of Science (2014): Impact factor 3.262
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.56 SJR 1.11 SNIP 1.199
Web of Science (2013): Impact factor 3.355
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.41 SJR 1.072 SNIP 1.148
Web of Science (2012): Impact factor 3.145
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.38 SJR 1.133 SNIP 1.157
Subacute oral toxicity investigation of selenium nanoparticles and selenite in rats

Selenium (Se) nanoparticles have been proposed as food supplements. However, the particle formulation may exert unexpected toxicity. The aim was therefore to compare toxicity of low doses of Se nanoparticles and the dissolved, ionized Se species selenite. Female rats were dosed orally for 28 d with either: 0.05, 0.5, or 4 mg Se/kg body weight (bw)/day as 20 nm Se nanoparticles or 0.05 or 0.5 mg Se/kg bw/day as sodium selenite. Male rats were dosed 4 mg Se/kg bw/day as Se nanoparticles. Body weight and clinical appearance were recorded throughout the experiment. At necropsy, blood samples were taken for hematological and clinical chemistry analyses; organ weights were recorded. At the high-dose of Se nanoparticles, overt toxicity occurred and the female animals had to be euthanized prematurely, whereas the male animals were reduced in dose. At all doses of Se nanoparticles and at 0.5 mg Se/kg bw/day as selenite, a lower body weight gain as compared to vehicle occurred. Relative liver weight was increased for both Se dosed groups. There were no effects among dosed groups on brain neurotransmitters or on hematological parameters compared with controls. There were no histological changes in the livers of animals exposed to Se nanoparticles or to selenite. Based on effects on body weight and liver weight, selenium nanoparticles and ionic Se exerted similar toxicity. This suggests that a nanoparticle-specific toxicity of Se did not occur.

State: Accepted/In press
Publication date: 2018
Peer-reviewed: Yes
Association between single nucleotide polymorphisms in the antioxidant genes CAT, GR and SOD1, erythrocyte enzyme activities, dietary and lifestyle factors and breast cancer risk in a Danish, prospective cohort study

Exposure to estrogens and alcohol consumption - the two only well-established risk factors for breast cancer - are capable of causing oxidative stress, which has been linked to progression of breast cancer. Here, five functional polymorphisms in the antioxidant genes SOD1, CAT and GSR were investigated in 703 breast cancer case-control pairs in the Danish, prospective "Diet, Cancer and Health" cohort together with gene-environment interactions between the polymorphisms, enzyme activities and intake of fruits and vegetables, alcohol and smoking in relation to breast cancer risk. Our results showed that genetically determined variations in the antioxidant enzyme activities of SOD1, CAT and GSR were not associated with risk of breast cancer per se. However, intake of alcohol, fruit and vegetables, and smoking status interacted with some of the polymorphisms in relation to breast cancer risk. Four polymorphisms were strongly associated with enzyme activity, but there was no interaction between any of the studied environmental factors and the polymorphisms in relation to enzyme activity. Additionally, single measurement of enzyme activity at entry to the cohort was not associated with risk of breast cancer. Our results therefore suggest that the antioxidant enzyme activities studied here are not major determinants of breast cancer risk.

General information
State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit, National Research Centre for the Working Environment, University of Copenhagen, Danish Cancer Society
Number of pages: 14
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: OncoTarget
Article number: 18062
ISSN (Print): 1949-2553
Ratings:
Web of Science (2018): Indexed yes
Scopus rating (2017): CiteScore 4.65 SJR 1.942 SNIP 1.039
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 4.73 SJR 1.994 SNIP 1.062
Web of Science (2016): Impact factor 5.168
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 4.91 SJR 2.26 SNIP 1.116
Web of Science (2015): Impact factor 5.008
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 4.96 SJR 2.551 SNIP 1.285
Web of Science (2014): Impact factor 6.359
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 5.26 SJR 3.061 SNIP 1.261
Web of Science (2013): Impact factor 6.627
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): CiteScore 6.54 SJR 2.512 SNIP 1.065
Web of Science (2012): Impact factor 6.636
ISI indexed (2012): ISI indexed no
Scopus rating (2011): CiteScore 3.38 SJR 1.505 SNIP 0.489
Web of Science (2011): Impact factor 4.784
ISI indexed (2011): ISI indexed no
Original language: English
Keywords: antioxidant enzymes, breast cancer, gene-environment interactions, prospective cohort study, single nucleotide polymorphisms
Electronic versions:
kopp_TI_2017.pdf
DOIs:
10.18632/oncotarget.18062
Genetisk bestemte forskelle i antioxidant enzymaktivitet er ikke associeret med risiko for brystkæft

General information
State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit, National Research Centre for the Working Environment, University of Copenhagen, Danish Cancer Society
Pages: 19-25
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: Miljø og Sundhed
Volume: 23
Issue number: 1
ISSN (Print): 1395-5241
Original language: Danish
Electronic versions:
ms1701.pdf
Source: PublicationPreSubmission
Source-ID: 133230154
Research output: Research - peer-review › Journal article – Annual report year: 2017

Risikovurdering af bog (frugten fra bøgetræet) som fødevare

General information
State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit, Division of Risk Assessment and Nutrition
Contributors: Pilegaard, K., Eriksen, F. D., Ravn-Haren, G., Egebjerg, M. M., Olesen, P. T.
Pages: 1-5
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: E-artikel fra DTU Fødevareinstitutet
Volume: 2017
Issue number: 4
ISSN (Print): 1904-5581
Original language: Danish
Electronic versions:
E_artikel_Risikovurdering_af_bog_frugten_fra_boegetraeet_som_foedevare_2_.pdf
Research output: Research - peer-review › Journal article – Annual report year: 2017

Alcohol-related breast cancer in postmenopausal women - effect of CYP19A1, PPARG and PPARGC1A polymorphisms on female sex-hormone levels and interaction with alcohol consumption and NSAID usage in a nested case-control study and a randomised controlled trial

Alcohol consumption is associated with increased risk of breast cancer (BC), and the underlying mechanism is thought to be sex-hormone driven. In vitro and observational studies suggest a mechanism involving peroxisome proliferator-activated receptor gamma (PPARγ) in a complex with peroxisome proliferator-activated receptor gamma coactivator 1-α (PGC-1α) and interaction with aromatase (encoded by CYP19A1). Use of non-steroidal anti-inflammatory drugs (NSAID) may also affect circulating sex-hormone levels by modifying PPARγ activity. In the present study we assessed whether genetic variation in CYP19A1 is associated with risk of BC in a case-control study group nested within the Danish "Diet,
Cancer and Health cohort (n_cases=687 and n_controls=687) and searched for gene-gene interaction between CYP19A1 and PPARGC1A, and CYP19A1 and PPARG, and gene-alcohol and gene-NSAID interactions. Association between the CYP19A1 polymorphisms and hormone levels was also examined among 339 non-HRT users. Incidence rate ratios were calculated based on Cox' proportional hazards model. Furthermore, we performed a pilot randomised controlled trial to determine the effect of the PPARG Pro(12)Ala polymorphism and the PPARγ stimulator Ibuprofen on sex-hormone levels following alcohol intake in postmenopausal women (n=25) using linear regression. Genetic variations in CYP19A1 were associated with hormone levels (estrone: P rs11070844=0.009, estrone sulphate: P rs11070844=0.01, P rs749292=0.004, P rs1062033=0.007 and P rs10519297=0.03, and sex hormone-binding globulin (SHBG): P rs3751591=0.03) and interacted with alcohol intake in relation to hormone levels (estrone sulphate: P interaction/rs2008691=0.02 and P interaction/rs1062033=0.03, and SHBG: P interaction/rs11070844=0.03). CYP19A1/rs3751591 was both associated with SHBG levels (P=0.03) and with risk of BC (Incidence Rate Ratio=2.12; 95% Confidence Interval: 1.02-4.43) such that homozygous variant allele carriers had increased levels of serum SHBG and were at increased risk of BC. Acute intake of alcohol decreased blood estrone (P=

General information
State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit, Danish Cancer Society, Statens Serum Institut, University of Copenhagen, Rigshospitalet, National Research Centre for the Working Environment
Number of pages: 19
Publication date: 2016
Peer-reviewed: Yes

Publication information
Journal: B M C Cancer
Volume: 16
Issue number: 1
Article number: 283
ISSN (Print): 1471-2407
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.49 SJR 1.464 SNIP 1.066
Web of Science (2017): Impact factor 3.288
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.56 SJR 1.488 SNIP 1.071
Web of Science (2016): Impact factor 3.288
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.72 SJR 1.652 SNIP 1.14
Web of Science (2015): Impact factor 3.265
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.73 SJR 1.719 SNIP 1.27
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.84 SJR 1.694 SNIP 1.282
Web of Science (2013): Impact factor 3.319
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.79 SJR 1.654 SNIP 1.203
Web of Science (2012): Impact factor 3.333
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.55 SJR 1.541 SNIP 1.074
De fleste får nok vitaminer og mineraler fra kosten alene

General information
State: Published
Organisations: National Food Institute, Division of Risk Assessment and Nutrition, Research Group for Risk-Benefit
Pages: 1-13
Publication date: 2016
Peer-reviewed: Yes

Publication information
Journal: E-artikel fra DTU Fødevareinstituttet
Volume: 2016
Issue number: 2
ISSN (Print): 1904-5581
Original language: Danish
Electronic versions:
E_artikel_De_fleste_faa_nok_vitaminer_og_mineraler_fra_kosten_alene.pdf
Research output: Research - peer-review › Journal article – Annual report year: 2016

Effects of 14-day oral low dose selenium nanoparticles and selenite in rat—as determined by metabolite pattern determination
Selenium (Se) is an essential element with a small difference between physiological and toxic doses. To provide more effective and safe Se dosing regimens, as compared to dosing with ionic selenium, nanoparticle formulations have been developed. However, due to the nano-formulation, unexpected toxic effects may occur. We used metabolite pattern determination in urine to investigate biological and/or toxic effects in rats administered nanoparticles and for comparison included ionic selenium at an equimolar dose in the form of sodium selenite. Low doses of 10 and 100 fold the recommended human high level were employed to study the effects at borderline toxicity. Evaluations of all significantly
changed putative metabolites, showed that Se nanoparticles and sodium selenite induced similar dose dependent changes of the metabolite pattern. Putative identified metabolites included increased decenedioic acid and hydroxydecanedioic acid for both Se formulations whereas dipeptides were only increased for selenite. These effects could reflect altered fatty acid and protein metabolism, respectively.

**General information**

State: Published
Number of pages: 14
Publication date: 2016
Peer-reviewed: Yes

**Publication information**

Journal: PeerJ
Volume: 4
Article number: e2601
ISSN (Print): 2167-8359
Ratings:
- BFI (2018): BFI-level 1
- Web of Science (2018): Indexed yes
- BFI (2017): BFI-level 1
- Scopus rating (2017): CiteScore 2.38 SJR 1.087 SNIP 0.896
- Web of Science (2017): Impact factor 2.118
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 2.36 SJR 1.124 SNIP 0.859
- Web of Science (2016): Impact factor 2.177
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): CiteScore 2.1 SJR 1.152 SNIP 0.979
- Web of Science (2015): Impact factor 2.183
- BFI (2014): BFI-level 1
- Scopus rating (2014): CiteScore 2.14 SJR 0.998 SNIP 0.84
- Web of Science (2014): Impact factor 2.112
- BFI (2013): BFI-level 1
- ISI indexed (2013): ISI indexed no

Original language: English
Keywords: Food Science and Technology, Toxicology, Pharmacology, Metabolic Sciences, Selenium, Nanoparticle, Metabolomic pattern recognition

Electronic versions:
- Hadrup_et_al_2016.pdf
- 10.7717/peerj.2601
- https://peerj.com/articles/2601/

Research output: Research - peer-review › Journal article – Annual report year: 2016

---

**Generne styrer danskernes D-vitaminniveau**

**General information**

State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit, National Research Centre for the Working Environment
Contributors: Nissen, I., Andersen, R., Ravn-Haren, G., Vogel, U.
Pages: 29-30
Publication date: 2016
Peer-reviewed: Yes
An explorative study of the effect of apple and apple products on the human plasma metabolome investigated by LC–MS profiling

Apple is one of the most commonly consumed fruits worldwide and it has been associated with several health effects, especially on plasma cholesterol and risk of cardiovascular disease both in human and animal studies. By using an untargeted metabolomics approach we wanted to investigate whether supplementation of whole apple or processed apple products affect the human plasma metabolome. Therefore, 24 healthy volunteers were recruited for a comprehensive 5 × 4 weeks dietary crossover study and receiving supplement of whole apples (550 g/day), clear and cloudy apple juices (500 ml/day), dried apple pomace (22 g/day), or no supplement. Plasma was collected for analysis after an overnight fast and analysed by UPLC-ESI-TOF-MS. Discriminative features revealed by Partial Least Square-Discriminant Analysis showed whole apple and apple pomace having generally a stronger modifying effect of the plasma metabolome than the other apple products. We observed an effect on branched-chain amino acids and aromatic amino acids degradation, and a decreased use of lipid fuels indicating an improvement in glucose utilisation. A reduced level of plasma bile acids after apple consumption may indicate less re-absorption from the gut. Some lysoPCs and a steroid hormone precursor decreased as well, indicating a reduced outbound cholesterol transport from the liver and less use of cholesterol for steroid synthesis. In the light of these results, we speculate that apple and/or apple pomace seems to affect cholesterol homeostasis by several mechanisms.

General information
State: Published
Organisations: National Food Institute, Division of Toxicology and Risk Assessment, University of Copenhagen
Contributors: Rago, D., Gürdeniz, G., Ravn-Haren, G., Dragsted, L. O.
Number of pages: 13
Pages: 27-39
Publication date: 2015
Peer-reviewed: Yes
The incidence of cancer in the western world has increased steeply during the last 50 years. For three of the most prevalent cancer types in Denmark, prostate, breast and colorectal cancer (PC, BC and CRC, respectively), only a small fraction (1-15%) of the incidences are caused by highly penetrant single-gene mutations due to their low frequency in the general population. Overall, the contribution from hereditary factors to the causation of BC is only 27%, whereas genetics contributes to 35% and 42% for CRC and PC, respectively. Additionally, immigration studies point to environmental factors as having strong influence on carcinogenesis. Therefore, very frequent, low effect polymorphisms may have a greater contribution on a population level in combination with environmental factors. Indeed, several dietary and lifestyle factors are now well-established risk factors for different cancer types, such as alcohol consumption, smoking, obesity, inflammation and high meat intake; whereas other factors protect against cancer, such as high intake of dietary fibre, fruits and vegetables, and physical activity. Investigating the interactions between genetic variations and environmental factors, such as dietary and lifestyle factors may provide information about the underlying mechanisms and reveal new biological pathways.

The aim of this PhD thesis was to investigate relevant risk factors in relation to the three major cancer types in Denmark: PC, BC and CRC, respectively. The two major risk factors examined in this thesis are inflammation and alcohol consumption. With regard to inflammation, biological pathways involved in inflammation and the interaction with different dietary and lifestyle factors modulating the risk of CRC (Paper II-IV) and PC (Paper I), respectively, was examined. Moreover, a possible mechanism in alcohol-related BC in postmenopausal women involving a specific polymorphism in
Design: The VitDgen study includes 92 healthy Danes who received 4 whole-body UVB treatments with a total dose of 6 on 25(OH)D concentrations after artificial UVB irradiation and supplementation by vitamin D3–fortified bread and milk. The VitmaD study. Second, we aimed to determine whether the genetic variations in CYP2R1 and GC have similar effects located in or near genes involved in vitamin D synthesis, transport, activation, or degradation as previously described for increase in 25(OH)D concentrations after a given dose of artificial UVB irradiation and 25 single nucleotide polymorphisms (SNPs) in UVB–induced 25-hydroxyvitamin D [25(OH)D] concentrations. In the Food with vitamin D (VitmaD) study, we showed that common genetic variants rs10741657 and rs10766197 in 25-hydroxylase (CYP2R1) and rs842999 and rs4588 in vitamin D binding protein (GC) predict 25(OH)D concentrations at late summer and after 6-mo consumption of cholecalciferol (vitamin D3)–fortified bread and milk.

Objectives: In the current study, called the Vitamin D in genes (VitDgen) study, we analyzed associations between the increase in 25(OH)D concentrations after a given dose of artificial UVB irradiation and 25 single nucleotide polymorphisms (SNPs) located in or near genes involved in vitamin D synthesis, transport, activation, or degradation as previously described for the VitmaD study. Second, we aimed to determine whether the genetic variations in CYP2R1 and GC have similar effects on 25(OH)D concentrations after artificial UVB irradiation and supplementation by vitamin D3–fortified bread and milk.

Design: The VitDgen study includes 92 healthy Danes who received 4 whole-body UVB treatments with a total dose of 6
or 7.5 standard erythema doses during a 10-d period in winter. The VitmaD study included 201 healthy Danish families who were given vitamin D3–fortified bread and milk or placebo for 6 mo during the winter.

Results: After UVB treatments, rs10741657 in CYP2R1 and rs4588 in GC predicted UVB-induced 25(OH)D concentrations as previously shown in the VitmaD study. Compared with noncarriers, carriers of 4 risk alleles of rs10741657 and rs4588 had lowest concentrations and smallest increases in 25(OH)D concentrations after 4 UVB treatments and largest decreases in 25(OH)D concentrations after 6-mo consumption of vitamin D3–fortified bread and milk.

Conclusion: Common genetic variants in the CYP2R1 and GC genes modify 25(OH)D concentrations in the same manner after artificial UVB-induced vitamin D and consumption of vitamin D3–fortified bread and milk. The VitDgen study was registered at clinicaltrials.gov as NCT01741233. The VitmaD study was registered at clinicaltrials.gov as NCT01184716.
Common Variants in CYP2R1 and GC Genes Predict Vitamin D Concentrations in Healthy Danish Children and Adults

Environmental factors such as diet, intake of vitamin D supplements and exposure to sunlight are known to influence serum vitamin D concentrations. Genetic epidemiology of vitamin D is in its infancy and a better understanding on how genetic variation influences vitamin D concentration is needed. We aimed to analyse previously reported vitamin D-related polymorphisms in relation to serum 25(OH)D concentrations in 201 healthy Danish families with dependent children in late summer in Denmark. Serum 25(OH)D concentrations and a total of 25 SNPs in GC, VDR, CYP2R1, CYP24A1, CYP27B1, C10or88 and DHCR7/NADSYN1 genes were analysed in 758 participants. Genotype distributions were in Hardy-Weinberg equilibrium for the adult population for all the studied polymorphisms. Four SNPs in CYP2R1 (rs1562902, rs7116978, rs10741657 and rs10766197) and six SNPs in GC (rs4588, rs842999, rs2282679, rs12512631, rs16846876 and rs17467825) were statistically significantly associated with serum 25(OH)D concentrations in children, adults and all combined. Several of the SNPs were in strong linkage disequilibrium, and the associations were driven by CYP2R1-rs10741657 and rs10766197, and by GC-rs4588 and rs842999. Genetic risk score analysis showed that carriers with no risk alleles of CYP2R1-rs10741657 and rs10766197, and/or GC rs4588 and rs842999 had significantly higher serum 25(OH)D concentrations compared to carriers of all risk alleles. To conclude, our results provide supporting evidence that common polymorphisms in GC and CYP2R1 are associated with serum 25(OH)D concentrations in the Caucasian population and that certain haplotypes may predispose to lower 25(OH)D concentrations in late summer in Denmark.

General information
State: Published
Organisations: National Food Institute, Division of Nutrition, Division of Toxicology and Risk Assessment, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Aarhus University, National Research Centre for the Working Environment
Mange børn og unge får for meget koffein fra energidrikke

General information
State: Published
Organisations: National Food Institute, Division of Nutrition, Division of Toxicology and Risk Assessment, Division of Food Chemistry, Technical University of Denmark
Number of pages: 6
Publication date: 2014
Peer-reviewed: No

Publication information
Journal: E-artikel fra DTU Fødevareinstitutet
Volume: 2014
Issue number: 6
ISSN (Print): 1904-5581
Original language: Danish
Electronic versions:
E_artikel_Mange_børn_og_unge_får_for_meget_koffein_fra_energidrikke.pdf
Research output: Research › Journal article – Annual report year: 2014

Real-life use of vitamin D₃ fortified bread and milk during a winter season: the effects of CYP2R1 and GC genes on 25-hydroxyvitamin D concentrations in Danish families, the VitmaD study.

Common genetic variants rs10741657 and rs10766197 in CYP2R1 and rs4588 and rs842999 in GC and a combined genetic risk score (GRS) of these four variants influence late summer 25-hydroxyvitamin D (25(OH)D) concentrations. The objectives were to identify those who are most at risk of developing low vitamin D status during winter and to assess whether vitamin D₃-fortified bread and milk will increase 25(OH)D concentrations in those with genetically determined low 25(OH)D concentrations at late summer. We used data from the VitmaD study. Participants were allocated to either vitamin D₃-fortified bread and milk or non-fortified bread and milk during winter. In the fortification group, CYP2R1 (rs10741657) and GC (rs4588 and rs842999) were statistically significantly associated with winter 25(OH)D concentrations and CYP2R1 (rs10766197) was borderline significant. There was a negative linear trend between 25(OH)D concentrations and carriage of 0-8 risk alleles (p <0.0001). No association was found for the control group (p = 0.1428). There was a significant positive linear relationship between different quintiles of total vitamin D intake and the increase in 25(OH)D concentrations among carriers of 0-2 (p = 0.0012), 3 (p = 0.0001), 4 (p = 0.0118) or 5 (p = 0.0029) risk alleles, but not among carriers of 6-8 risk alleles (p = 0.1051). Carriers of a high GRS were more prone to be vitamin D deficient compared to carriers of a low GRS. Furthermore, rs4588-AA carriers have a low but very stable 25(OH)D concentration, and interestingly, also low PTH level.

General information
State: Published
Organisations: National Food Institute, Division of Nutrition, Division of Toxicology and Risk Assessment, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Aarhus University
Number of pages: 15
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Genes & Nutrition
Volume: 9
Issue number: 4
Article number: 413
ISSN (Print): 1555-8932
Association between Polymorphisms in Glutathione Peroxidase and Selenoprotein P Genes, Glutathione Peroxidase Activity, HRT Use and Breast Cancer Risk.

Breast cancer (BC) is one of the most common cancers in women. Evidence suggests that genetic variation in antioxidant enzymes could influence BC risk, but to date the relationship between selenoproteins and BC risk remains unclear. In this report, a study population including 975 Danish cases and 975 controls matched for age and hormone replacement therapy (HRT) use was genotyped for five functional single nucleotide polymorphisms (SNPs) in SEPP1, GPX1, GPX4 and the antioxidant enzyme SOD2 genes. The influence of genetic polymorphisms on breast cancer risk was assessed using conditional logistic regression. Additionally pre-diagnosis erythrocyte GPx (eGPx) activity was measured in a sub-group of the population. A 60% reduction in risk of developing overall BC and ductal BC was observed in women who were homozygous Thr carriers for SEPP1 rs3877899. Additionally, Leu carriers for GPX1 Pro198Leu polymorphism
(rs1050450) were at ∼2 fold increased risk of developing a non-ductal BC. Pre-diagnosis eGPx activity was found to depend on genotype for rs713041 (GPX4), rs3877899 (SEPP1), and rs1050450 (GPX1) and on HRT use. Moreover, depending on genotype and HRT use, eGPx activity was significantly lower in women who developed BC later in life compared with controls. Furthermore, GPx1 protein levels increased in human breast adenocarcinoma MCF7 cells exposed to β-estradiol and sodium selenite. In conclusion, our data provide evidence that SNPs in SEPP1 and GPX1 modulate risk of BC and that eGPx activity is modified by SNPs in SEPP1, GPX4 and GPX1 and by estrogens. Our data thus suggest a role of selenoproteins in BC development.

**General information**

State: Published
Organisations: National Food Institute, Division of Toxicology and Risk Assessment, Newcastle University, Danish Cancer Society, National Research Centre for the Working Environment, University of Copenhagen
Number of pages: 9
Publication date: 2013
Peer-reviewed: Yes

**Publication information**

Volume: 8
Issue number: 9
Article number: e73316
ISSN (Print): 1932-6203
Ratings:
- BFI (2018): BFI-level 1
- Web of Science (2018): Indexed yes
- BFI (2017): BFI-level 1
- Scopus rating (2017): CiteScore 3.01 SJR 1.164 SNIP 1.111
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 3.11 SJR 1.236 SNIP 1.101
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): CiteScore 3.32 SJR 1.427 SNIP 1.136
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): CiteScore 3.54 SJR 1.559 SNIP 1.148
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): CiteScore 3.94 SJR 1.772 SNIP 1.153
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): CiteScore 4.15 SJR 1.982 SNIP 1.156
- Web of Science (2012): Impact factor 3.73
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): CiteScore 4.58 SJR 2.425 SNIP 1.233
- Web of Science (2011): Impact factor 4.092
- ISI indexed (2011): ISI indexed no
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 1
- Scopus rating (2010): SJR 2.705 SNIP 1.178
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 2.614 SNIP 1.046
Intake of whole apples or clear apple juice has contrasting effects on plasma lipids in healthy volunteers

PURPOSE:
Fruit consumption is associated with a decreased risk of CVD in cohort studies and is therefore endorsed by health authorities as part of the '5 or more a day' campaigns. A glass of fruit juice is generally counted as one serving. Fruit may cause protection by affecting common risk factors of CVD.

METHODS:
Apples are among the most commonly consumed fruits and were chosen for a comprehensive 5 × 4 weeks dietary crossover study to assess the effects of whole apples (550 g/day), apple pomace (22 g/day), clear and cloudy apple juices (500 ml/day), or no supplement on lipoproteins and blood pressure in a group of 23 healthy volunteers.

RESULTS:
The intervention significantly affected serum total and LDL-cholesterol. Trends towards a lower serum LDL-concentration were observed after whole apple (6.7 %), pomace (7.9 %) and cloudy juice (2.2 %) intake. On the other hand, LDL-cholesterol concentrations increased by 6.9 % with clear juice compared to whole apples and pomace. There was no effect on HDL-cholesterol, TAG, weight, waist-to-hip ratio, blood pressure, inflammation (hs-CRP), composition of the gut microbiota or markers of glucose metabolism (insulin, IGF1 and IGFBP3).

CONCLUSIONS:
Apples are rich in polyphenols and pectin, two potentially bioactive constituents; however, these constituents segregate differently during processing into juice products and clear juice is free of pectin and other cell wall components. We conclude that the fibre component is necessary for the cholesterol-lowering effect of apples in healthy humans and that clear apple juice may not be a suitable surrogate for the whole fruit in nutritional recommendations.
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.22 SJR 1.328 SNIP 1.158
Web of Science (2016): Impact factor 4.37
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.13 SJR 1.36 SNIP 1.143
Web of Science (2015): Impact factor 3.239
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.28 SJR 1.271 SNIP 1.213
Web of Science (2014): Impact factor 3.467
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.2 SJR 1.031 SNIP 1.138
Web of Science (2013): Impact factor 3.84
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.91 SJR 0.983 SNIP 1.056
Web of Science (2012): Impact factor 3.127
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.02 SJR 1.15 SNIP 1.106
Web of Science (2011): Impact factor 2.75
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.224 SNIP 1.21
Web of Science (2010): Impact factor 3.343
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.054 SNIP 1.165
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.812 SNIP 0.862
Scopus rating (2007): SJR 0.967 SNIP 1.088
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.082 SNIP 1.116
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.001 SNIP 1.109
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.764 SNIP 0.901
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.78 SNIP 0.748
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.327 SNIP 0.637
Scopus rating (2001): SJR 0.295 SNIP 0.627
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.191 SNIP 0.322
Scopus rating (1999): SJR 0.145 SNIP 0.184
Original language: English
DOIs: 10.1007/s00394-012-0489-z
Source: dtu
Source-ID: u::6521
Research output: Research - peer-review › Journal article – Annual report year: 2012
Particle-induced pulmonary acute phase response correlates with neutrophil influx linking inhaled particles and cardiovascular risk

Background
Particulate air pollution is associated with cardiovascular disease. Acute phase response is causally linked to cardiovascular disease. Here, we propose that particle-induced pulmonary acute phase response provides an underlying mechanism for particle-induced cardiovascular risk.

Methods
We analysed the mRNA expression of Serum Amyloid A (Saa3) in lung tissue from female C57BL/6J mice exposed to different particles including nanomaterials (carbon black and titanium dioxide nanoparticles, multi- and single walled carbon nanotubes), diesel exhaust particles and airborne dust collected at a biofuel plant. Mice were exposed to single or multiple doses of particles by inhalation or intratracheal instillation and pulmonary mRNA expression of Saa3 was determined at different time points of up to 4 weeks after exposure. Also hepatic mRNA expression of Saa3, SAA3 protein levels in bronchoalveolar lavage fluid and in plasma and high density lipoprotein levels in plasma were determined in mice exposed to multiwalled carbon nanotubes.

Results
Pulmonary exposure to particles strongly increased Saa3 mRNA levels in lung tissue and elevated SAA3 protein levels in bronchoalveolar lavage fluid and plasma, whereas hepatic Saa3 levels were much less affected. Pulmonary Saa3 expression correlated with the number of neutrophils in BAL across different dosing regimens, doses and time points.

Conclusions
Pulmonary acute phase response may constitute a direct link between particle inhalation and risk of cardiovascular disease. We propose that the particle-induced pulmonary acute phase response may predict risk for cardiovascular disease.

General information
State: Published
Organisations: National Food Institute, Division of Toxicology and Risk Assessment, Department of Micro- and Nanotechnology, National Research Centre for the Working Environment, Danish Technological Institute, University of Copenhagen
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: PloS one.
Volume: 8
Issue number: 7
Article number: e69020
ISSN (Print): 1932-6203
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.01 SJR 1.164 SNIP 1.111
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.11 SJR 1.236 SNIP 1.101
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.32 SJR 1.427 SNIP 1.136
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.54 SJR 1.559 SNIP 1.148
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.94 SJR 1.772 SNIP 1.153
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 4.15 SJR 1.982 SNIP 1.156
Web of Science (2012): Impact factor 3.73
Intake of fish oil reduces the risk of CHD and CHD deaths. Marine n-3 fatty acids (FA) are susceptible to oxidation, but to our knowledge, the health effects of intake of oxidised fish oil have not previously been investigated in human subjects. The aim of the present study was to investigate markers of oxidative stress, lipid peroxidation and inflammation, and the level of plasma n-3 FA after intake of oxidised fish oil. In a double-blinded randomised controlled study, healthy subjects (aged 18–50 years, n 54) were assigned into one of three groups receiving capsules containing either 8 g/d of fish oil (1·6 g/d EPA þ DHA; n 17), 8 g/d of oxidised fish oil (1·6 g/d EPA þ DHA; n 18) or 8 g/d of high-oleic sunflower oil (n 19). Fasting blood and morning spot urine samples were collected at weeks 0, 3 and 7. No significant changes between the different groups were observed with regard to urinary 8-iso-PGF2α; plasma levels of 4-hydroxy-2-hexenal, 4-hydroxy-2-nonenal and α-tocopherol; serum high sensitive C-reactive protein; or activity of antioxidant enzymes in erythrocytes. A significant increase in plasma level of EPA þ DHA was observed in both fish oil groups, but no significant difference was observed between the fish oil groups. No changes in a variety of in vivo markers of oxidative stress, lipid peroxidation or inflammation were observed after daily intake of oxidised fish oil for 3 or 7 weeks, indicating that intake of oxidised fish oil may not have unfavourable short-term effects in healthy human subjects.
Antioxidative enzymer i sygdomsforebyggelse og ernæring

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, University of Copenhagen
Contributors: Ravn-Haren, G., Dragsted, L. O.
Pages: 11-14
Publication date: 2011
Peer-reviewed: No

Publication information
Journal: Nordisk Nutrition
Issue number: 3
ISSN (Print): 1654-8337
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 313980
Research output: Research - peer-review › Journal article – Annual report year: 2011

Daily intake of apples decrease total cholesterol

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Division of Microbiology and Risk Assessment, Research Institute of Pomology and Floriculture, Technical University of Denmark, University of Copenhagen
Pages: 272-272
Publication date: 2011
Peer-reviewed: Yes

Publication information
Journal: Annals of Nutrition and Metabolism
Volume: 58
Issue number: 3
ISSN (Print): 0250-6807
Ratings:
New Insights on the Apple and Health

Regular consumption of fruits and vegetables is associated with reduced risks of certain cancers, cardiovascular diseases, stroke, Alzheimer disease etc. In this project, we focused on apples as a model fruit for some of this research due to its high contents of soluble and insoluble fibers, flavonoids and phenolic acids and because of the high intakes of apples in northern parts of Europe. A series of 4-16 w rat feeding studies with fresh whole apples, dried apple, apple puree, clear and cloudy apple juices, apple pomace, and apple pectins have been conducted. A human cross-over dietary intervention study in 24 healthy volunteers with apple and apple products has also been performed. They supplemented a polyphenol and pectin restricted diet with whole apples, apple pomace, cloudy or clear apple juices or nothing for 4 weeks. Feeding rats with 10g apple/d reduced plasma total, HDL cholesterol, and VLDL cholesterol at 4w and 16w without significantly affecting cholesterol ratios, plasma triacylglycerols, or gastrointestinal transit times. Screening the genes coding for 16s RNA in the intestinal flora and applying multivariate statistics revealed significant changes in the flora related to feeding with apple or apple pectin. This was also reflected in changed gut flora enzymatic activities, whereas caecum short chain fatty acid concentrations were unaffected by feeding with all apple products, except high doses of apple pectins. In the human study the whole apple had the strongest hypocholesterolemic effect, followed by apple pomace and cloudy apple juice. The clear apple juice, which is free of cell wall components showed adverse effect on serum cholesterol concentration and the effect differed markedly compared to the other apple products. There was no effect on HDL-cholesterol, triacylglycerol, bile acid excretion, weight, waist-to-hip circumference or blood pressure. We conclude that the cholesterol-lowering effect of apples is most likely due to the content of soluble fibre in combination with other cell wall components.

NMR and interval PLS as reliable methods for determination of cholesterol in rodent lipoprotein fractions

Risk of cardiovascular disease is related to cholesterol distribution in different lipoprotein fractions. Lipoproteins in rodent model studies can only reliably be measured by time- and plasma-consuming fractionation. An alternative method to measure cholesterol distribution in the lipoprotein fractions in rat plasma is presented in this paper. Plasma from two rat studies (n = 68) was used in determining the lipoprotein profile by an established ultracentrifugation method and proton nuclear magnetic resonance (NMR) spectra of replicate samples was obtained. From the ultracentrifugation reference data and the NMR spectra, an interval partial least-square (iPLS) regression model to predict the amount of cholesterol in the different lipoprotein fractions was developed. The relative errors of the prediction models were between 12 and 33% and had correlation coefficients (r) between 0.96 and 0.84. The models were tested with an independent test set giving prediction errors between 19 and 46% and r between 0.96 and 0.76. Prediction of High, Low and Very Low Density Lipoprotein (HDL, LDL and VLDL) and total cholesterol was conducted in a study where rats had been supplemented with two doses of air-dried apple-powder. No significant difference in LDL, VLDL and total cholesterol was observed between the groups. The high apple-powder (20%) group had significantly lower HDL cholesterol (11%, P = 0.0452) than the
control group. It is concluded that the iPLS approach yielded excellent regression models and thus univocal established chemometric analysis of NMR spectra of rat plasma as a strong and efficient way to quantify lipoprotein fractions in rat studies.

**General information**

State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, CFB - Core Flow, Division of Toxicology and Risk Assessment, National Food Institute, University of Copenhagen, Research Institute of Pomology and Floriculture
Contributors: Kristensen, M., Savorani, F., Ravn-Haren, G., Poulsen, M., Markowski, J., Larsen, F. H., Dragsted, L. O., Engelsen, S. B.
Pages: 129-136
Publication date: 2010
Peer-reviewed: Yes

**Publication information**

Journal: Metabolomics
Volume: 6
Issue number: 1
ISSN (Print): 1573-3882
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 3.19 SJR 1.122 SNIP 0.841
Web of Science (2017): Impact factor 3.511
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.66 SJR 1.186 SNIP 1.054
Web of Science (2016): Impact factor 3.692
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 3.49 SJR 1.318 SNIP 1.113
Web of Science (2015): Impact factor 3.661
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 3.74 SJR 1.309 SNIP 1.142
Web of Science (2014): Impact factor 3.855
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 4.03 SJR 1.133 SNIP 1.017
Web of Science (2013): Impact factor 3.965
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 4.37 SJR 1.225 SNIP 1.19
Web of Science (2012): Impact factor 4.433
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 4.48 SJR 1.372 SNIP 1.166
Web of Science (2011): Impact factor 4.505
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.165 SNIP 0.925
Web of Science (2010): Impact factor 3.608
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.279 SNIP 0.819
The Influence of Different Apple Based Supplements on the Intestinal Microbiota of Humans.

Background and objective: The present project is part of the large ISAFRUIT project, where one of the objectives is to identify effects of apple and apple product on parameters related to gut health. In a previous rat study we observed changes in the intestinal microbiota of rats fed whole apples, pomace or apple pectin ([1]), and we were interested in finding out if the same effect can be observed in humans. Method: The study was conducted as a randomized, controlled 5 x 28 days cross-over study with 24 healthy persons of both genders. The persons were following a pectin- and polyphenol free restriction diet during the control period, and in the four other periods it was supplied with four different apple based supplements. Between the diets there was a 2-week wash-out period still on the restriction diet. The four apple based supplements were: 1) whole apples, 2) clear apple juice (pectin-free), 3) cloudy juice (apple juice with pulp), and 4) pomace (press cake from the cloudy juice production process). Fecal samples were taken before and after each diet period. After DNA extraction, Denaturing Gradient Gel Electrophoresis (DGGE) with universal primers and specific primers for bifidobacteria and Clostridium cluster XIVa was performed. Bands differing between the periods were sequenced, and qPCR was performed to verify the changes observed by DGGE. Results: Changes in the microbiota was observed by DGGE in persons consuming whole apples and pomace. In contrast, the two juice supplements did not show any effect on the microbiota by DGGE. Conclusion: Consumption of whole apples or pomace is able to modify the intestinal microbiota of humans.
A metabolomics study on human dietary intervention with apples

Metabolomics is a promising tool for searching out new biomarkers and the development of hypotheses in nutrition research. This chapter will describe the design of human dietary intervention studies where samples are collected for metabolomics analyses as well as the analytical issues and data interpretation. Design considerations for metabolomic studies include the overall structure of the study as well as the control group, sample collection and handling, sample storage, sample analysis, quality control measures and plans for data analyses. Suggestions for designing feasible and ethical dietary studies are given.
Mini-review: The effects of apples on plasma cholesterol levels and cardiovascular risk - a review of the evidence

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, University of Copenhagen
Contributors: Jensen, E. N., Buch-Andersen, T., Ravn-Haren, G., Dragsted, L. O.
Pages: 34-41
Publication date: 2009
Peer-reviewed: Yes

Publication information
Journal: Journal of Horticultural Science and Biotechnology
ISSN (Print): 1462-0316
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.75 SJR 0.332 SNIP 0.542
Web of Science (2017): Impact factor 0.715
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.66 SJR 0.334 SNIP 0.586
Web of Science (2016): Impact factor 0.538
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.55 SJR 0.286 SNIP 0.544
Web of Science (2015): Impact factor 0.458
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.64 SJR 0.348 SNIP 0.6
Web of Science (2014): Impact factor 0.541
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.62 SJR 0.292 SNIP 0.528
Web of Science (2013): Impact factor 0.509
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.71 SJR 0.416 SNIP 0.768
Web of Science (2012): Impact factor 0.51
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.74 SJR 0.461 SNIP 0.705
Web of Science (2011): Impact factor 0.637
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.448 SNIP 0.685
Web of Science (2010): Impact factor 0.546
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.565 SNIP 1.03
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.61 SNIP 0.913
Scopus rating (2007): SJR 0.577 SNIP 1.018
Scopus rating (2006): SJR 0.525 SNIP 0.96
Scopus rating (2005): SJR 0.479 SNIP 0.853
Scopus rating (2004): SJR 0.584 SNIP 1.284
A short-term intervention trial with selenate, selenium-enriched yeast and selenium-enriched milk: effects on oxidative defence regulation

Increased Se intakes have been associated with decreased risk of cancer and CVD. Several mechanisms have been proposed, including antioxidant effects through selenoproteins, induction of carcinogen metabolism and effects on the blood lipid profile. In a 4 x 1 week randomised, double-blind cross-over study, healthy young men supplemented their usual diet with selenate, Se-enriched yeast, Se-enriched milk or placebo (Se dose was 300 µg/d for selenate and Se-enriched yeast, and about 480 µg/d for Se-enriched milk) followed by 8-week washout periods. All Se sources increased serum Se levels after supplementation for 1 week. The effect of the organic forms did not differ significantly and both increased serum Se more than selenate. Conversely, thrombocyte glutathione peroxidase (GPX) was increased in the periods where subjects were supplemented with selenate but not in those where they were given Se-enriched yeast or Se-enriched milk. We found no effect on plasma lipid resistance to oxidation, total cholesterol, TAG, HDL- and LDL-cholesterol, GPX, glutathione reductase (GR) and glutathione S-transferase (GST) activities measured in erythrocytes, GPX and GR activities determined in plasma, or GR and GST activities in thrombocytes. Leucocyte expression of genes encoding selenoproteins (GPX1, TrR1 and SelP), and of electrophile response element-regulated genes (GCLC, Fra1 and NQO1) were likewise unaffected at all time points following intervention. We conclude that thrombocyte GPX is specifically increased by short-term selenate supplementation, but not by short-term supplementation with organic Se. Short-term Se supplementation does not seem to affect blood lipid markers or expression and activity of selected enzymes and a transcription factor involved in glutathione-mediated detoxification and antioxidation.

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Division of Food Chemistry
Pages: 883-892
Publication date: 2008
Peer-reviewed: Yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.18 SJR 1.532 SNIP 1.273
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.61 SJR 2.746 SNIP 2.479
Web of Science (2013): Impact factor 3.861
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.12 SJR 2.308 SNIP 2.427
Web of Science (2012): Impact factor 5.5
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.13 SJR 2.085 SNIP 1.649
Web of Science (2011): Impact factor 4.842
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.236 SNIP 1.253
Web of Science (2010): Impact factor 3.774
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.627 SNIP 0.572
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.966 SNIP 1.2
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.987 SNIP 1.255
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.715 SNIP 0.925
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.519 SNIP 1.139
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.626 SNIP 1.088
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.727 SNIP 1.509
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.949 SNIP 1.736
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.838 SNIP 1.515
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.609 SNIP 1.611
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.568 SNIP 1.156
Original language: English
DOIs:
10.1017/S0007114507825153
Source: orbit
Source-ID: 233764
Research output: Research - peer-review › Journal article – Annual report year: 2008
A short-term intervention trial with selenate, selenium-enriched yeast and selenium-enriched milk: effects on oxidative defence regulation

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Section for Aquatic Protein Biochemistry, National Institute of Aquatic Resources, Division of Food Chemistry
Publication date: 2008
Peer-reviewed: No
Source: orbit
Source-ID: 235394
Research output: Research › Poster – Annual report year: 2008

Effect of long term selenium yeast intervention on activity and gene expression of antioxidant and xenobiotic metabolising enzymes in healthy elderly volunteers from the Danish Prevention of Cancer by Intervention by Selenium (PRECISE) Pilot Study
Numerous mechanisms have been proposed to explain the anti-carcinogenic effects of Se, among them altered carcinogen metabolism. We investigated the effect of Se supplementation on activities of glutathione peroxidase (GPX), glutathione reductase (GR) and glutathione S-transferase (GST) in different blood compartments, and expression of selected phase 1 and phase 2 genes in leucocytes (GPX1, gamma-glutamylcysteine ligase catalytic subunit (GCLC), AP-1 transcription factor Fos-related antigen I (Frai), NAD(P)H:quinone oxidoreductase (NQO1), and aryl hydrocarbon receptor repressor (AhRR)). Healthy elderly Danes (n 105; age 71.3 (SD 4.26) years; 36% reporting use of multivitamin/mineral supplements) participated and were supplemented daily for 5 years with placebo, 100 μg, 200 μg or 300 μg Se as Se-enriched yeast (SelenoPrecise®). Blood samples were collected after 5 years of intervention. When all four groups were compared we found no effect of Se supplementation on plasma GPX or GR, on erythrocyte GPX, GR or GST, or on thrombocyte GR or GST. We found increased thrombocyte GPX activity at the two highest dosage levels in women only, but not in men. No effects on GPX1, NQO1 or AhRR gene expression were found. When all Se-supplemented groups were pooled we found down regulation of the expression of some phase 2 genes (GCLC, Fra1). A significant increase in AhRR gene expression with smoking was found but was independent of Se supplementation. Down regulation of phase 2 genes could increase the risk of cancer. However, further studies are needed to establish whether the observed effect in leucocytes reflects a similar expression pattern in target tissues.

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Division of Food Chemistry
Contributors: Ravn-Haren, G., Krath, B., Overvad, K., Cold, S., Moesgaard, S., Larsen, E. H., Dragsted, L.
Pages: 1190-1198
Publication date: 2008
Peer-reviewed: Yes

Publication information
Journal: British Journal of Nutrition
Volume: 99
Issue number: 6
ISSN (Print): 0007-1145
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.65 SJR 1.756 SNIP 1.555
Web of Science (2017): Impact factor 4.586
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.46 SJR 2.055 SNIP 1.535
Web of Science (2016): Impact factor 4.844
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.52 SJR 1.583 SNIP 1.442
Web of Science (2015): Impact factor 4.051
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.18 SJR 1.532 SNIP 1.273
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.61 SJR 2.746 SNIP 2.479
Web of Science (2013): Impact factor 3.861
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.12 SJR 2.308 SNIP 2.427
Web of Science (2012): Impact factor 5.5
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.13 SJR 2.085 SNIP 1.649
Web of Science (2011): Impact factor 4.842
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.236 SNIP 1.253
Web of Science (2010): Impact factor 3.774
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.627 SNIP 0.572
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.966 SNIP 1.2
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.987 SNIP 1.255
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.715 SNIP 0.925
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.519 SNIP 1.139
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.626 SNIP 1.088
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.727 SNIP 1.509
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.949 SNIP 1.736
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.838 SNIP 1.515
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.609 SNIP 1.611
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.568 SNIP 1.156
Original language: English
DOIs:
10.1017/S0007114507882948
Source: orbit
Source-ID: 232936
Research output: Research - peer-review › Journal article – Annual report year: 2008
Gene-environment interactions between GPX1 Pro198Leu, GPX activity and lifestyle factors in relation to risk of colorectal, breast and lung cancer in the prospective Diet, Cancer and Health Cohort

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Publication date: 2008
Peer-reviewed: No
Event:
Source: orbit
Source-ID: 233670
Research output: Research › Conference abstract for conference – Annual report year: 2008

Health benefits of increased fruit intake - integrating observational studies with experimental studies on fruit health and nutrigenomics

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Danish Cancer Society, Research Institute of Pomology and Floriculture, University of Copenhagen
Contributors: Dragsted, L. O., Tjonneland, A., Ravn-Haren, G., Kristensen, M., Poulsen, M., Płocharsky, W., Bügel, S.
Pages: 55-69
Publication date: 2008
Peer-reviewed: Yes
Publication information
Journal: Scripta Horticulturae
Volume: 8
ISSN (Print): 1813-9205
Original language: English
URLs:
Source: orbit
Source-ID: 245831
Research output: Research - peer-review › Journal article – Annual report year: 2008

Dietary supplementation with an extract of lycopene-rich tomatoes does not reduce atherosclerosis in Watanabe Heritable Hyperlipidemic rabbits
Tomatoes are rich in lycopene and other carotenoids which have shown beneficial effects on CVD in epidemiological and intervention studies. In the present study the effect of an extract of lycopene-rich tomatoes, Lyc-O-Mato (R) on atherosclerosis was studied in Watanabe Heritable Hyperlipidemic rabbits. The rabbits were fed a control diet, a control diet supplemented with the tomato extract or a control diet supplemented with a mixture of plant oils for 16 weeks. Lycopene was detected only in plasma of rabbits receiving tomato extract. The tomato extract had no effect on cholesterol and triacylglycerol levels measured in total plasma, lipoprotein fractions and on aortic atherosclerosis evaluated biochemically and by microscopy. Oxidation of lipids in unfractionated plasma also was unaffected by the intake of tomato extract. In conclusion, the tomato extract increased plasma levels of lycopene in rabbits, but had no effect on hypercholesterolaemia, oxidation of plasma lipids or aortic atherosclerosis.

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Division of Food Chemistry
Pages: 6-10
Publication date: 2007
Peer-reviewed: Yes
Publication information
Journal: British Journal of Nutrition
Volume: 97
Issue number: 1
ISSN (Print): 0007-1145
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.65 SJR 1.756 SNIP 1.555
Web of Science (2017): Impact factor 4.586
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.46 SJR 2.055 SNIP 1.535
Web of Science (2016): Impact factor 4.844
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.52 SJR 1.583 SNIP 1.442
Web of Science (2015): Impact factor 4.051
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.18 SJR 1.532 SNIP 1.273
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.61 SJR 2.746 SNIP 2.479
Web of Science (2013): Impact factor 3.861
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.12 SJR 2.308 SNIP 2.427
Web of Science (2012): Impact factor 5.5
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.13 SJR 2.085 SNIP 1.649
Web of Science (2011): Impact factor 4.842
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.236 SNIP 1.253
Web of Science (2010): Impact factor 3.774
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.627 SNIP 0.572
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.966 SNIP 1.2
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.987 SNIP 1.255
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.715 SNIP 0.925
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.519 SNIP 1.139
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.626 SNIP 1.088
Web of Science (2004): Indexed yes
A lignan complex isolated from flaxseed does not affect plasma lipid concentrations or antioxidant capacity in healthy postmenopausal women

A lignan complex rich in the plant lignan secoisolariciresinol diglucoside (SDG) was isolated from flaxseed. SDG is metabolized by the colonic microflora to the mammalian lignans enterodiol (END) and enterolactone (ENL), and was hypothesized to reduce plasma lipid concentrations and improve antioxidant capacity. The aim of this study was to investigate the effects of a lignan complex, providing 500 mg/d of SDG, on serum concentration and urinary excretion of ENL, plasma lipids, serum lipoprotein oxidation resistance, and markers of antioxidant capacity. Healthy postmenopausal women (n=22) completed a randomized, double-blind, placebo-controlled, crossover study. Women consumed daily a low-fat muffin, with or without a lignan complex, for 6 wk, separated by a 6-wk washout period. Serum ENL concentration, urinary ENL excretion, plasma concentrations of total cholesterol (TC), LDL cholesterol (LDL-C), HDL cholesterol (HDL-C), triacylglycerol (TAG), serum lipoprotein oxidation lag time, plasma Trolox-equivalent antioxidant capacity (TEAC), and ferric reducing ability of plasma (FRAP) were measured at the beginning and end of each intervention period. ENL concentrations in serum (P <0.001) and ENL urinary excretion (P <0.001) were significantly higher after the lignan complex intervention period compared with placebo. Plasma concentrations of TC, LDL-C, HDL-C, TAG, lipoprotein oxidation lag time, TEAC and FRAP were not affected. Daily consumption for 6 wk of a low-fat muffin enriched with a lignan complex significantly increased serum ENL concentrations and urinary ENL excretion in healthy postmenopausal women, but had no effect on plasma lipid concentrations, serum lipoprotein oxidation resistance, or plasma antioxidant capacity.
Associations between GPX1 Pro198Leu polymorphism, erythrocyte GPX activity, alcohol consumption and breast cancer risk in a prospective cohort study

Breast cancer may be related to oxidative stress. Breast cancer patients have been reported to have lower antioxidant enzyme activity than healthy controls and the polymorphism GPX1 Pro198Leu has been associated with risk of lung and breast cancer. The purpose of the present nested case-control study was to determine whether GPX1 Pro198Leu and glutathione peroxidase (GPX) activity in prospectively collected blood samples are associated with breast cancer risk among postmenopausal women and whether GPX activity levels are associated with other known breast cancer risk factors. We matched 377 female breast cancer cases with 377 controls all nested within the prospective 'Diet, Cancer and Health' study of 57 000 Danes. Carriers of the variant T-allele of GPX1 Pro198Leu were at 1.43-fold higher risk of breast cancer compared with non-carriers (95% CI = 1.07-1.92). Pre-diagnostic GPX activity tended to be lower in cases compared with controls. GPX activity was positively correlated with intake of alcohol (P <0.0001) and the catalytic activity was lowered 5% for each additional copy of the variant T-allele (P = 0.0003). Alcohol intake was correlated with increased GPX activity for the C-allele but not for the T-allele. Results from this prospective study suggest that the GPX1 Pro198Leu-associated lowered GPX activity is associated with higher breast cancer risk among Danish women.

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Pages: 820-825
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Carcinogenesis
Volume: 27
Issue number: 4
ISSN (Print): 0143-3334
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 4.95 SJR 2.135 SNIP 1.266
Web of Science (2017): Impact factor 5.072
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.03 SJR 2.247 SNIP 1.401
Web of Science (2016): Impact factor 5.105
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 5.18 SJR 2.439 SNIP 1.353
Web of Science (2015): Impact factor 4.874
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 5.32 SJR 2.574 SNIP 1.426
Web of Science (2014): Impact factor 5.334
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 5.7 SJR 2.743 SNIP 1.638
Web of Science (2013): Impact factor 5.266
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 6.17 SJR 2.905 SNIP 1.627
Web of Science (2012): Impact factor 5.635
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 5.85 SJR 2.916 SNIP 1.512
Web of Science (2011): Impact factor 5.702
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.624 SNIP 1.455
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.421 SNIP 1.384
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.493 SNIP 1.416
Scopus rating (2007): SJR 2.503 SNIP 1.446
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.344 SNIP 1.417
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.368 SNIP 1.467
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 2.303 SNIP 1.489
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 2.197 SNIP 1.374
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.8 SNIP 1.382
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.851 SNIP 1.31
Scopus rating (2000): SJR 1.787 SNIP 1.245
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.641 SNIP 1.23
Original language: English
Source: orbit
Source-ID: 230137
Research output: Research - peer-review › Journal article – Annual report year: 2006

Biological effects of fruit and vegetables

A strong and persistent effect of plant-derived foods on the prevention of lifestyle diseases has emerged from observational studies. Several groups of constituents in plants have been identified as potentially health promoting in animal studies, including cholesterol-lowering factors, antioxidants, enzyme inducers, apoptosis inducers etc. In human intervention studies the dose levels achieved tend to be lower than the levels found to be effective in animals and sampling from target organs is often not possible. A controlled dietary human intervention study was performed with forty-three volunteers, providing 600 hairspg fruit and vegetables/d or in the controls a carbohydrate-rich drink to balance energy intake. Surrogate markers of oxidative damage to DNA, protein and lipids, enzymic defence and lipid metabolism were determined in blood and urine. It was found that a high intake of fruit and vegetables tends to increase the stability of lipids towards oxidative damage. Markers of oxidative enzymes indicate a steady increase in glutathione peroxidase (GPX1) activity in erythrocytes during intervention with fruit and vegetables but there is no effect on GPX1 transcription levels in leucocytes. No change occurs in glutathione-conjugating or -reducing enzyme activities in erythrocytes or plasma, and there are no effects on the transcription of genes involved in phase 2 enzyme induction or DNA repair in leucocytes. Fruit and vegetable intake decreases the level of total cholesterol and LDL-cholesterol, but does not affect sex hormones. In conclusion, it has been shown that total cholesterol and LDL-cholesterol, markers of peripheral lipid oxidation, and erythrocyte GPX1 activity are affected by high intakes of fruit and vegetables. This finding provides support for a protective role of dietary fruit and vegetables against CVD.
Carbohydrate digestibility predicts colon carcinogenesis in azoxymethane-treated rats

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Technical University of Denmark
Pages: 163-170
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Nutrition and Cancer
Volume: 55
Issue number: 2
ISSN (Print): 0163-5581
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.4 SJR 0.745 SNIP 0.698
Web of Science (2017): Impact factor 2.261
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.5 SJR 0.926 SNIP 0.829
Web of Science (2016): Impact factor 2.447
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.36 SJR 0.98 SNIP 0.809
Web of Science (2015): Impact factor 2.241
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.5 SJR 0.926 SNIP 0.805
Web of Science (2014): Impact factor 2.322
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.07 SJR 1.061 SNIP 0.832
Web of Science (2013): Impact factor 2.635
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.2 SJR 1.107 SNIP 0.934
Web of Science (2012): Impact factor 2.695
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.83 SJR 0.911 SNIP 0.884
Web of Science (2011): Impact factor 2.783
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
Effect of long-term selenium yeast supplementation on biomarkers of oxidative defence in healthy elderly volunteers

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Division of Food Chemistry
Publication date: 2006
Peer-reviewed: No
Event: Poster session presented at LMC International Food Congress 2006, Copenhagen, Denmark.
Source: orbit
Source-ID: 236941
Research output: Research › Poster – Annual report year: 2006

Effect of long-term selenium yeast supplementation on biomarkers of oxidative defence in healthy elderly volunteers

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Division of Food Chemistry, Aalborg University, Odense University Hospital, Pharma Nord Aps., Danish Institute for Food and Veterinary Research
Number of pages: 1
Pages: 49–50
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Food & Nutrition Research
Volume: 50
Issue number: Suppl. 1
ISSN (Print): 1654-6628
Interaction between alcohol intake and oxidative defence in breast cancer

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Publication date: 2006
Peer-reviewed: No
Interaction between alcohol intake and oxidative defence in breast cancer

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Danish Cancer Society, Danish Institute for Food and Veterinary Research, Aarhus University, National Institute of Occupational Health, Aalborg University Hospital
Number of pages: 1
Pages: 49
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Food & Nutrition Research
Volume: 50
Issue number: Suppl. 1
ISSN (Print): 1654-6628
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.28 SJR 0.823 SNIP 0.779
Web of Science (2017): Impact factor 2.086
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.24 SJR 0.906 SNIP 0.768
Web of Science (2016): Impact factor 2.039
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.19 SJR 1.024 SNIP 0.911
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.37 SJR 1.03 SNIP 0.918
Web of Science (2014): Impact factor 2.162
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.82 SJR 0.753 SNIP 0.817
Web of Science (2013): Impact factor 1.785
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.45 SJR 0.721 SNIP 0.64
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0 SJR 0.862 SNIP 1.03
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.987 SNIP 0.893
BFI (2009): BFI-level 1
Anthocyanins increase low-density lipoprotein and plasma cholesterol and do not reduce atherosclerosis in Watanabe Heritable Hyperlipidemic rabbits

Anthocyanin-rich beverages have shown beneficial effects on coronary heart disease in epidemiological and intervention studies. In the present study, we investigated the effect of black currant anthocyanins on atherosclerosis. Watanabe Heritable Hyperlipidemic rabbits (n = 61) were fed either a purified anthocyanin fraction from black currants, a black currant juice, probucol or control diet for 16 weeks. Purified anthocyanins significantly increased plasma cholesterol and low-density lipoprotein (LDL) cholesterol. Intake of black currant juice had no effect on total plasma cholesterol, but lowered very-low-density lipoprotein (VLDL) cholesterol significantly. There were no significant effects of either purified anthocyanins or black currant juice on aortic cholesterol or development of atherosclerosis after 16 weeks. Probucol had no effect on plasma cholesterol but significantly lowered VLDL-cholesterol and decreased aortic cholesterol accumulation. The erythrocyte antioxidant enzyme glutathione peroxidase was significantly increased by purified anthocyanins and superoxide dismutase was increased by both anthocyanin-containing treatments. Other markers of plasma antioxidant capacity, antioxidant enzymes, protein and lipid oxidation were not affected by any of the anthocyanin treatments. Adverse effects of purified anthocyanins were observed on plasma- and LDL-cholesterol. These effects were not observed with black currant juice, suggesting that black currants may contain components reducing the adverse effects of anthocyanins.

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Division of Food Chemistry
Pages: 301-308
Publication date: 2005
Peer-reviewed: Yes

Publication information
Journal: Molecular Nutrition & Food Research
Volume: 49
Issue number: 4
ISSN (Print): 1613-4125
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 4.75 SJR 1.666 SNIP 1.283
Web of Science (2017): Impact factor 5.151
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.48 SJR 1.614 SNIP 1.275
Web of Science (2016): Impact factor 4.323
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 4.53 SJR 1.702 SNIP 1.404
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.55 SJR 1.687 SNIP 1.439
Effect of changes in fruit and vegetable intake on plasma antioxidant defenses in humans - Reply

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Pages: 531-538
Publication date: 2005
Peer-reviewed: Yes

Publication information
Journal: AMERICAN JOURNAL OF CLINICAL NUTRITION
Volume: 81
ISSN (Print): 0002-9165
Ratings:
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2018)</td>
<td>2</td>
<td>Indexed yes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year (2017)</th>
<th>BFI-level</th>
<th>Web of Science (2017)</th>
<th>Impact factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2017)</td>
<td>2</td>
<td>Indexed yes</td>
<td>6.549</td>
</tr>
<tr>
<td>Web of Science (2017)</td>
<td>Indexed yes</td>
<td></td>
<td>6.926</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2016)</td>
<td>2</td>
<td>CiteScore 5.97 SJR 3.782 SNIP 2.325</td>
<td>Indexed yes</td>
<td>6.77</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2015)</td>
<td>2</td>
<td>CiteScore 5.87 SJR 3.899 SNIP 2.394</td>
<td>Indexed yes</td>
<td>6.703</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2014)</td>
<td>2</td>
<td>CiteScore 5.71 SJR 3.853 SNIP 2.385</td>
<td>Indexed yes</td>
<td>6.77</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2013)</td>
<td>2</td>
<td>CiteScore 6.38 SJR 4.055 SNIP 2.58</td>
<td>Indexed yes</td>
<td>6.918</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2012)</td>
<td>2</td>
<td>CiteScore 6.05 SJR 3.744 SNIP 2.432</td>
<td>Indexed yes</td>
<td>6.504</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2011)</td>
<td>2</td>
<td>CiteScore 6.23 SJR 3.607 SNIP 2.467</td>
<td>Indexed yes</td>
<td>6.669</td>
</tr>
</tbody>
</table>

|-------------|------------|----------------------|------------------------|---------------|

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2009)</td>
<td>2</td>
<td>SJR 3.25 SNIP 2.453</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2008)</td>
<td>2</td>
<td>SJR 3.346 SNIP 2.259</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2007)</td>
<td>2</td>
<td>SJR 3.39 SNIP 2.497</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2006)</td>
<td>2</td>
<td>SJR 3.245 SNIP 2.397</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2005)</td>
<td>2</td>
<td>SJR 2.829 SNIP 2.36</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

|-------------|------------|----------------------|------------------------|---------------|

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2003)</td>
<td>2</td>
<td>SJR 2.664 SNIP 2.594</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2002)</td>
<td>2</td>
<td>SJR 2.33 SNIP 2.549</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (2001)</td>
<td>2</td>
<td>SJR 2.829 SNIP 2.36</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

|-------------|------------|----------------------|------------------------|---------------|

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (1999)</td>
<td>2</td>
<td>SJR 2.664 SNIP 2.594</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI (1998)</td>
<td>2</td>
<td>SJR 2.33 SNIP 2.549</td>
<td>Indexed yes</td>
<td>6.259</td>
</tr>
</tbody>
</table>
Effect of long-term selenium yeast intervention on biomarkers of oxidative defence in healthy volunteers

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Contributors: Ravn-Haren, G., Krath, B., Overvad, K., Cold, S., Moesgaard, S., Dragsted, L. O.
Publication date: 2005
Peer-reviewed: No
Event: Poster session presented at 4th International Meeting, Dietary antioxidants: Trace elements, vitamins and polyphenols – Functional and clinical aspects in Humans, Monastir, Tunisia, .
Source: orbit
Source-ID: 236974
Research output: Research › Poster – Annual report year: 2005

Commonly consumed and naturally occurring dietary substances affect biomarkers of oxidative stress and DNA damage in healthy rats

The influence of black currant juice, Bowman-Birk protease inhibitor (BBI), kolaviron (a biflavonoid fraction of Garcinia kola seed), sugars, vitamin C and tert-butyl hydroperoxide on a wide range of biomarkers for oxidative stress, DNA damage and sugar or lipid metabolism has been investigated in male F 344 rats. The selected pro-oxidant control, tert-butyl hydroperoxide, significantly increased plasma and liver 2-amino-adipic semialdehyde (AAS), a marker of protein oxidation (p <0.05) whereas lipid oxidation assessed as malon dialdehyde (MDA) and DNA oxidation were not significantly increased. Feeding BBI also increased the level of oxidized protein in plasma and liver at the higher dose level (0.5%). No effect was observed at the lower dose level (0.25%), which even decreased lipid oxidation in plasma. BBI did not affect background levels of DNA strand breaks or oxidation (comets). In rats exposed to black currant juice, a statistically significant decrease in liver AAS and MDA was observed. This effect could not be explained by its content of sugars or of the known redox active constituent, vitamin C. The lowering effect of black currant juice on protein and lipid oxidation was similar in magnitude to that of the known liver protectant, kolaviron. In rats treated with kolaviron (200 mg/kg body weight), background AAS levels were significantly reduced in both plasma and liver whereas the effect on MDA only reached statistical significance in plasma. Kolaviron was the only extract tested which decreased oxidative damage to DNA in the liver. The erythrocyte antioxidant enzyme activities, catalase and glutathione peroxidase were decreased in rats treated with tert-butyl hydroperoxide (p <0.05) but were not affected by the other treatments. Black currant juice and sugars increased plasma triglyceride levels and black currant juice increased plasma cholesterol but neither of them nor any other treatment affected blood glucose, erythrocyte HbA1c or fructosamine. We conclude that markers of oxidative stress may be modified by several mechanisms after feeding rats with complex dietary factors and that both pro- and antioxidant effects may consequently be observed simultaneously after short-term feeding of antioxidant-rich foods, herb medicines, or known pro- and antioxidants. (C) 2004 Published by Elsevier Ltd.

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Technical University of Denmark
Pages: 1315-1322
Publication date: 2004
Peer-reviewed: Yes

Publication information
Journal: FOOD AND CHEMICAL TOXICOLOGY
Volume: 42
Issue number: 8
ISSN (Print): 0278-6915
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
<table>
<thead>
<tr>
<th>Year</th>
<th>BFI Rating</th>
<th>Scopus Rating</th>
<th>Web of Science Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>BFI-level 1</td>
<td>CiteScore 3.99 SJR 1.144 SNIP 1.427</td>
<td>Impact factor 3.977</td>
</tr>
<tr>
<td>2016</td>
<td>BFI-level 1</td>
<td>CiteScore 3.96 SJR 1.351 SNIP 1.58</td>
<td>Impact factor 3.778</td>
</tr>
<tr>
<td>2015</td>
<td>BFI-level 1</td>
<td>CiteScore 3.44 SJR 1.202 SNIP 1.415</td>
<td>Impact factor 3.584</td>
</tr>
<tr>
<td>2014</td>
<td>BFI-level 1</td>
<td>CiteScore 3.12 SJR 1.038 SNIP 1.369</td>
<td>Impact factor 2.895</td>
</tr>
<tr>
<td>2013</td>
<td>BFI-level 1</td>
<td>CiteScore 3.26 SJR 1.02 SNIP 1.506</td>
<td>Impact factor 2.61</td>
</tr>
<tr>
<td>2012</td>
<td>BFI-level 1</td>
<td>CiteScore 3.52 SJR 1.126 SNIP 1.748</td>
<td>Impact factor 3.01</td>
</tr>
<tr>
<td>2011</td>
<td>BFI-level 1</td>
<td>CiteScore 3.36 SJR 1.124 SNIP 1.58</td>
<td>Impact factor 2.999</td>
</tr>
<tr>
<td>2010</td>
<td>BFI-level 1</td>
<td>SJR 0.93 SNIP 1.221</td>
<td>Impact factor 2.602</td>
</tr>
<tr>
<td>2009</td>
<td>BFI-level 1</td>
<td>SJR 0.833 SNIP 1.056</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>BFI-level 2</td>
<td>SJR 0.771 SNIP 1.163</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>Indexed yes</td>
<td>SJR 0.803 SNIP 1.441</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>Indexed yes</td>
<td>SJR 0.884 SNIP 1.379</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>Indexed yes</td>
<td>SJR 0.897 SNIP 1.205</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>Indexed yes</td>
<td>SJR 0.877 SNIP 1.196</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>Indexed yes</td>
<td>SJR 0.688 SNIP 1.038</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Indexed yes</td>
<td>SJR 0.608 SNIP 1.125</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>Indexed yes</td>
<td>SJR 0.573 SNIP 0.985</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Indexed yes</td>
<td>SJR 0.506 SNIP 0.889</td>
<td></td>
</tr>
</tbody>
</table>
The 6-a-day study: effects of fruit and vegetables on markers of oxidative stress and antioxidative defense in healthy nonsmokers

Background: Fruit and vegetables contain both nutritive and nonnutritive factors that might contribute to redox (antioxidant and prooxidant) actions. Objective: We investigated the relative influence of nutritive and nonnutritive factors in fruit and vegetables on oxidative damage and enzymatic defense. Design: A 25-d intervention study with complete control of dietary intake was performed in 43 healthy male and female nonsmokers who were randomly assigned to 1 of 3 groups. In addition to a basic diet devoid of fruit and vegetables, the fruit and vegetables (Fruveg) group received 600 g fruit and vegetables/d; the placebo group received a placebo pill, and the supplement group received a vitamin pill designed to contain vitamins and minerals corresponding to those in 600 g fruit and vegetables. Biomarkers of oxidative damage to protein and lipids and of antioxidant nutrients and defense enzymes were determined before and during intervention. Results: Plasma lipid oxidation lag times increased during intervention in the Fruveg and supplement groups, and the increase was significantly higher in the former. Plasma protein carbonyl formation at lysine residues also increased in both of these groups. Glutathione peroxidase activity increased in the Fruveg group only. Other markers of oxidative damage, oxidative capacity, or antioxidant defense were largely unaffected by the intervention. Conclusions: Fruit and vegetables increase erythrocyte glutathione peroxidase activity and resistance of plasma lipoproteins to oxidation more efficiently than do the vitamins and minerals that fruit and vegetables are known to contain. Plasma protein carbonyl formation at lysine residues increases because of the vitamins and minerals in fruit and vegetables.
Absorption and excretion of black currant anthocyanins in human and Watanabe Heritable Hyperlipidemic rabbits

Anthocyanins are thought to protect against cardiovascular diseases. Watanabe heritable hyperlipidemic (WHHL) rabbits are hypercholesterolemic and used as a model of the development of atherosclerosis. To compare the uptake and excretion of anthocyanins in humans and WHHL rabbits, single-dose black currant anthocyanin studies were performed. Procedures for workup and analyses of urine and plasma samples containing anthocyanins were developed with high recoveries (99 and 81%, respectively) and low limits of quantification (greater than or equal to 6.6 and greater than or equal to 1.1 nM, respectively). The excretion and absorption of anthocyanins from black currant juice were found to be within the same order of magnitude in the two species regarding urinary excretion within the first 4 h (rabbits, 0.035%; humans, 0.072%) and t(max) (rabbits, similar to 30 min; humans, similar to 45 min). A food matrix effect was detected in rabbits, resulting in the absorption of a higher proportion of the anthocyanins from black currant juice than from an
aqueous citric acid matrix. In humans the absorption and urinary excretion of anthocyanins from black currant juice were found to be proportional with dose and not influenced by the ingestion of a rice cake. In both species a larger proportion of the anthocyanin rutinosides than of the glucosides was absorbed, whereas the structure of the aglycon had no influence on the absorption and excretion. The anthocyanins had no effect in rabbits on the antioxidant capacity of plasma measured as Trolox equivalent antioxidant capacity and ferruc reducing ability of plasma.

**General information**
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Contributors: Nielsen, I. L. F., Ravn-Haren, G., Dragsted, L. O., Freese, R., Nielsen, S. E.
Pages: 2813-2820
Publication date: 2003
Peer-reviewed: Yes

**Publication information**
Journal: Journal of Agricultural and Food Chemistry
Volume: 51
Issue number: 9
ISSN (Print): 0021-8561
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 3.64 SJR 1.269 SNIP 1.343
Web of Science (2017): Impact factor 3.412
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.45 SJR 1.305 SNIP 1.343
Web of Science (2016): Impact factor 3.154
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 3.23 SJR 1.224 SNIP 1.245
Web of Science (2015): Impact factor 2.857
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 3.25 SJR 1.267 SNIP 1.413
Web of Science (2014): Impact factor 2.912
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 3.44 SJR 1.43 SNIP 1.47
Web of Science (2013): Impact factor 3.107
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 3.2 SJR 1.408 SNIP 1.464
Web of Science (2012): Impact factor 2.906
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 3.1 SJR 1.389 SNIP 1.441
Web of Science (2011): Impact factor 2.823
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.42 SNIP 1.391
Web of Science (2010): Impact factor 2.816
Web of Science (2010): Indexed yes
Association between erythrocyte GPX activity, hGPX1 Pro198Leu polymorphism and risk of breast cancer

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Publication date: 2003
Peer-reviewed: No
Source: orbit
Source-ID: 236975
Research output: Research › Poster – Annual report year: 2003

Biomarkører for eksponering og effekt af gær-selen i det danske PRECISE pilot-interventionsstudie

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Contributors: Larsen, E. H., Cold, S., Overvad, K., Ravn-Haren, G., Dragsted, L. O.
Pages: 1-8
Publication date: 2003
Peer-reviewed: Unknown
Oxidative DNA damage in vitamin C-supplemented guinea pigs after intratracheal instillation of diesel exhaust particles

The health effects of diesel exhaust particles (DEP) are thought to involve oxidative damage. We have investigated the effect of intratracheal DEP instillation to guinea pigs in three groups of 12 animals each given 0, 0.7, or 2.1 mg. Five days later guinea pigs exposed to DEP had increased levels of oxidized amino acids (gamma-glutamyl semialdehyde), DNA strand breaks, and 7-hydro-8-oxo-2'-deoxyguanosine (8-oxodG) in the lung. Bulky DNA adducts were not significantly elevated in the lung. The antioxidant enzyme activity of glutathione reductase was increased in the lung of DEP-exposed guinea pigs, whereas glutathione peroxidase and superoxide dismutase enzyme activities were unaltered. There was no difference in DNA strand breaks in lymphocytes or urinary excretion of 8-oxodG at the two doses tested. Protein oxidations in plasma and in erythrocytes were not altered by DEP exposure. The concentrations of ascorbate in liver, lung, and plasma were unaltered by the DEP exposure. The results indicate that in guinea pigs DEP causes oxidative DNA damage rather than bulky DNA adducts in the lung. Guinea pigs, which are similar to humans with respect to vitamin C metabolism, may serve as a new model for the study of oxidative damage induced by particulate matter. (C) 2003 Elsevier Science (USA). All rights reserved.
Quantification of anthocyanins in commercial black currant juices by simple high-performance liquid chromatography. Investigation of their pH stability and antioxidative potency

Quantitative determinations of the four black currant anthocyanins, cyanidin 3-O-beta-glucoside, cyanidin 3-O-beta-rutinoside, delphinidin 3-O-beta-glucoside, and delphinidin 3-O-beta-rutinoside, were achieved in black currant juices by a rapid and sensitive high-performance liquid chromatographic (HPLC) method. The method was validated, and quantification of anthocyanins in 13 commercially available black currant beverages was demonstrated. To optimize the handling of anthocyanin-containing samples, the pH-dependent stability of the anthocyanins was investigated. Four anthocyanins were incubated for 24 h in aqueous solutions at 13 different pH levels between 0.6 and 5.2, after which the samples were analyzed by HPLC. More than 90% of each anthocyanin remained intact up to pH 3.3. At pH 3.8 a local minimum in stability was detected, and at pH >4.5 the stability rapidly decreased. The antioxidant capacity of all 13 black currant juices was investigated by TEAC and FRAP, and the antioxidant potential of both the anthocyanin and the vitamin C contents in the juices was evaluated. This indicated that

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Pages: 5861-5866
Publication date: 2003
Peer-reviewed: Yes

Publication information
Journal: Journal of Agricultural and Food Chemistry
Volume: 51
Issue number: 20
ISSN (Print): 0021-8561
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 3.64 SJR 1.269 SNIP 1.343
Web of Science (2017): Impact factor 3.412
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.45 SJR 1.305 SNIP 1.343
Web of Science (2016): Impact factor 3.154
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 3.23 SJR 1.224 SNIP 1.245
Web of Science (2015): Impact factor 2.857
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 3.25 SJR 1.267 SNIP 1.413
Web of Science (2014): Impact factor 2.912
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 3.44 SJR 1.43 SNIP 1.47
Web of Science (2013): Impact factor 3.107
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 3.2 SJR 1.408 SNIP 1.464
Web of Science (2012): Impact factor 2.906
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 3.1 SJR 1.389 SNIP 1.441
Detection, stability and redox effects of black currant anthocyanin glycosides in vivo: Positive identification by mass spectrometry

Anthocyanins are ingested as the red and blue coloured pigments in berries and red wine. They are potent antioxidants and their redox actions might positively affect health. It is therefore of interest to device a method to determine these compounds in blood and excreta, and to determine their stability, their biokinetics, and the forms in which they are absorbed and excreted. In the present study we have examined their stability in urine, their urinary excretion in rabbits, and their presence in human plasma and urine from a single volunteer. Urine samples containing anthocyanins can be stored for at least 7 months at 80 degreesC, provided they are acidified during collection, added an internal standard and stored at pH around 1.8. Black currant anthocyanins are absorbed and excreted quickly with a peak plasma concentration around 1 h after a single dose. Within 0.5-2 hours after dosing, the redox capacity of plasma was significantly increased in the rabbits. Urinary excretion peaked at 1-4 h and was almost complete within 24 h in both rabbits and man. Based on UV spectra and retention times, only unchanged glucosides and rutinosides were observed in all samples. Positive identification of the four anthocyanin glycosides in a human urine sample was obtained by LC-API-MS.

General information
State: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute
Contributors: Nielsen, I. L. F., Nielsen, S. E., Ravn-Haren, G., Dragsted, L. O.
Pages: 389-393
Publication date: 2001
Effects of fruit and vegetable consumption on antioxidant defence and protein oxidation of fasting plasma samples

Fruits and vegetables are known to protect against cancer and heart disease. This is often ascribed to their high content of antioxidants. We have therefore tested whether a daily intake of fruits and vegetables corresponding to the recommended 600 g had any effect on the antioxidant activity of fasting and postprandial plasma samples. Antioxidant activity was determined by the Trolox Equivalent Antioxidant Capacity (TEAC) assay and the Ferric Reducing Ability of Plasma (FRAP) assay, which have been reported to be affected by the presence of dietary antioxidants.

Sex differences in plasma antioxidant capacity but no effects of fruit and vegetable consumption

Mycotoxin production by Penicillium expansum on black currant and cherry juice
Projects:

**Ha(c)k Dit Grønt**

Ha(c)k your Greens is a digital learning universe for the teaching of biology in the elementary school, which promotes healthy food habits in children from 7th to 9th grade. The vision of the project is to create an engaging community in the class, where knowledge, and experiences with designing your own greens in a high-tech and fun way, creates an interest in food, meals and health. Ha(c)k your Greens learning universe comprises of a food computer integrated with a web-based platform, where the students can programme how the greens will grow and find educational material. In this way the teaching of the journey from ground to table is moved into the classroom and the biology classes. Two prototypes will be developed and tested during 2019-2020. 

Ha(c)k your Greens is a cooperation between DTU Food, Copenhagen University College, DTU Skylab and Center for Playware at DTU Electro. It is supported by the Nordea-foundation.

Jacobsen, H. V. S., Project Participant, National Food Institute  
Andersen, R., PI, Research Group for Risk-Benefit, National Food Institute  
Ravn-Haren, G., Project Participant, Research Group for Risk-Benefit, National Food Institute  
Schnipper, A., Project Participant, National Food Institute  
Svagin, J., Project Participant, Office for Innovation & Sector Services  
Lund, H. H., Project Participant, Centre for Playware, Copenhagen Center for Health Technology, Department of Electrical Engineering, Automation and Control  
01/11/2018 → 31/12/2020  
Keywords: Food computer, food computer, nutrition, vegetables, science education  
Collaborators: Københavns Professionshøjskole  
Project: Research

**Risikovurdering af planter og andre råvarer fra den danske natur i forhold til anvendelse som fødevarer samt videnskabelig og populær formidling af den indsamlede viden**

Pilegaard, K., Project Participant, National Food Institute, Research Group for Risk-Benefit  
Ravn-Haren, G., Project Participant, National Food Institute, Research Group for Risk-Benefit  
Eriksen, F. D., Project Participant, National Food Institute, Division of Risk Assessment and Nutrition  
Olesen, P. T., Project Participant, National Food Institute, Division of Risk Assessment and Nutrition  
Egebjerg, M. M., Project Participant, National Food Institute, Division of Risk Assessment and Nutrition  
Bredsdorff, L., Project Participant, National Food Institute, Division of Risk Assessment and Nutrition  
Miljø- og Fødevareministeriet  
31/12/2016 → 28/02/2018  
Project: Research

**Food-based solutions for optimal vitamin D nutrition and health**

Grønborg, I. M., PhD Student, National Food Institute  
Andersen, R., Main Supervisor, National Food Institute  
Andersen, E. W., Supervisor, Department of Informatics and Mathematical Modeling  
Tetens, I., Supervisor, National Food Institute  
Ravn-Haren, G., Examiner, National Food Institute  
Meyer, H. E., Examiner  
Rejnmark, L., Examiner  
Meyer, H. E., Examiner  
Rejnmark, L., Examiner  
Samfinansieret - Andet  
01/09/2014 → 23/08/2018  
Award relations: Food-based solutions for optimal vitamin D nutrition and health  
Project: PhD

**Toxikologiske effekter af akkumulering af nanopartikler i leveren**

Modrzynska, J., PhD Student, National Food Institute  
Ravn-Haren, G., Main Supervisor, National Food Institute  
Löschner, K., Supervisor, National Food Institute  
Jørgensen, A. T., Supervisor, Department of Applied Chemistry  
Vogel, U. B., Supervisor, National Food Institute  
Sloth, J. J., Examiner, National Food Institute  
Larsen, A., Examiner  
Strøger, T. J., Examiner  
Larsen, A., Examiner
**Strøger, T. J., Examiner**
Institut stipendie (DTU) Samf.
01/09/2012 → 07/11/2017
Award relations: Toksikologiske effekter af akkumulering af nanopartikler i leveren
Project: PhD

---

**Betydningen af genotyper for D-vitaminstatus**
Nissen, I., PhD Student, National Food Institute
Andersen, R., Main Supervisor, National Food Institute
Andersen, E. W., Supervisor
Ravn-Haren, G., Supervisor, National Food Institute
Vogel, U. B., Supervisor, National Food Institute
Wulf, H. C., Supervisor
Poulsen, M., Examiner, National Food Institute
Linneberg, A., Examiner
Meyer, H. E., Examiner
Forskningsrådsfinansiering
01/09/2010 → 15/12/2015
Award relations: Betydningen af genotyper for D-vitaminstatus
Project: PhD

---

**Metabolisme af D-vitamin**
Burild, A., PhD Student, National Food Institute
Jakobsen, J., Main Supervisor, National Food Institute
Frandsen, H. L., Supervisor, National Food Institute
Ravn-Haren, G., Examiner, National Food Institute
Höller, U., Examiner
Rejnmark, L., Examiner
Forskningsrådsfinansiering
01/12/2010 → 03/12/2014
Award relations: Metabolisme af D-vitamin
Project: PhD

---

**D Vitamin og prostata cancer risiko**
Kopp, T. I., PhD Student, National Food Institute
Nellemann, C., Main Supervisor, National Food Institute
Jakobsen, J., Supervisor, National Food Institute
Ravn-Haren, G., Supervisor, National Food Institute
Tjønneland, A., Supervisor
Vogel, U. B., Supervisor, National Food Institute
Sharma, A. K., Examiner, National Food Institute
Loft, S., Examiner
Pavanello, S., Examiner
Forskningsrådsfinansiering
01/10/2010 → 29/04/2015
Award relations: D Vitamin og prostata cancer risiko
Project: PhD

---

**Meat and colorectal cancer**
To investigate the effect of minced red meat on the microflora and inflammation in Abcb1a knockout and wild type mice
Ravn-Haren, G., Project Participant, National Food Institute, Research Group for Risk-Benefit
Mortensen, A., Project Participant, National Food Institute, Division of Risk Assessment and Nutrition
Vogel, U. B., Project Participant
Family Erichsens Mindefond : DKK200,000.00
01/08/2013 → 30/11/2014
Award relations: Meat and colorectal cancer
Project: Research

---

**Drogelisten**
denne side sammen med et tillæg, der indeholder nyeste opdatering. Dette tillæg indeholder planter/svampe, der ikke tidligere har været vurderet og derfor ikke var opført i Drogelisten (2000). Tillægget indeholder også i enkelte tilfælde en revurdering af en plante f.eks. indeholder tillægget en ny vurdering af Amerikansk Tørst (Rhamnus purshiana DC.), hvor den max. accepterede daglige dosis er sat ned. Drogelisten, som ikke er udtæmmende, er udarbejdet som en hjælp for producenter/importører/forhandlere af kosttilskud, fødevarekontrolen og forbrugerne. Det er naturligvis fortsat producenten/importøren/forhandlere, der har ansvaret for at sikre, at de planter m.m. de markedsfører, er egnede til at indtage i de pågældende mængder. Det skal endvidere bemærkes, at vurderingerne i Droglisten udelukkende er toksikologiske vurderinger foretaget på den videnskabelige litteratur, der er publiceret om planten. Der er ikke foretaget en vurdering af, om den enkelte plante har en virkning, der gør, at produkter indeholdende den givne plante må sælges som kosttilskud. Det forhold, at en plante er opført i Droglisten, er således ikke i sig selv ensbetydende med, at den må anvendes i kosttilskud. Lovgivningen og kontrollen på området administreres af Fødevarestyrelsen. Nogle produkter indeholdende planter eller svampe kan også indeholde ingredienser eller være markedsført på en sådan måde at de falder ind under lovgivningen vedrørende lægemidler. Lægemiddelstyrelsen er den myndighed, der afgrænser, hvornår en vare bliver et lægemiddel. At noget stammer fra naturen er ikke en garanti for, at det er ufarligt at indtage. I modsætning til f.eks. tilsætningsstoffer er der ikke krav om, at der findes undersøgelser, der tester planteingrediensernes mulige giftvirkning før brug. I få tilfælde har anvendelse af droger givet anledning til akut toksiske effekter på mennesker. For eksempel var der i Holland for ca. 10 år siden 63 personer, som blev akut syge med opkastninger og epilepsilignende krampen efter indtagelse af en urtete, hvor der i stedet for krydderiet Stjerneanis (Illicium verum L.) ved en fejltagelse var anvendt Japansk Stjerneanis (Illicium anisatum L.). Sådanne effekter, hvor man hurtigt efter indtagelsen ser symptomer på forgiftning, vil som regel let blive opdaget, mens det er sværere at opdage andre skadelige effekter, som udvikles efter længere tids indtagelse af drogen eller hvor symptomer først optræder år efter at indtagelsen er ophørt. I dyreforsøg har man set eksempler på, at bladet og ekstrakter fra Hellig basilikum (Ocimum tenuiflorum L.) har påvirket frugtbarheden og sædkvaliteten hos forsøgsdyr. Et tredje eksempel er at plantedele fra Følfod (Tussilago farfara L.), Kulssukker-slægten (Symphytum) og Brandbæger-slægten (Senecio) m.fl. ikke er sundhedsmaessigt acceptable på grund af deres indhold af pyrrolizidinalkaloider, som har vist sig at være kræftemfaldende i dyreforsøg og har givet anledning til leverforandringer i mennesker.

Pilegaard, K., Project Manager, National Food Institute, Division of Toxicology and Risk Assessment
Ravn-Haren, G., Project Participant, National Food Institute, Division of Toxicology and Risk Assessment
Olesen, P. T., Project Participant, National Food Institute, Division of Toxicology and Risk Assessment
01/01/1989 → …

Project: Research

Activities:

Risk-Benefit assessment of a moderate alcohol intake
Period: Feb 2018 → Jun 2018
Gitte Ravn-Haren (Main supervisor)
National Food Institute
Research Group for Risk-Benefit

Description
Master Thesis
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

Consumer preferences for coffee in Denmark
Period: 2018
Gitte Ravn-Haren (External examiner)
National Food Institute
Research Group for Risk-Benefit

Description
Master Thesis
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

Intake of food supplements among female fitness athletes and their possible harmful effects - with a focus on green tea
Period: 2018
Gitte Ravn-Haren (Main supervisor)
Kirsten Pilegaard (Supervisor)
National Food Institute
Research Group for Risk-Benefit

**Description**
Diplomingeniørprojekt
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

**Risks and benefits associated with a moderate alcohol intake**
Period: 2018
Gitte Ravn-Haren (Main supervisor)
National Food Institute
Research Group for Risk-Benefit

**Description**
Specialkursus
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

**Salt and risk of cardiovascular disease**
Period: 2018
Gitte Ravn-Haren (Main supervisor)
National Food Institute
Research Group for Risk-Benefit

**Description**
Specialkursus
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

**The benefits of salt reduction and the associated microbiological risks in soups**
Period: 2018
Gitte Ravn-Haren (Supervisor)
National Food Institute
Research Group for Risk-Benefit

**Description**
Master Thesis
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

**The effects of β-glucan consumption on colonic fermentation, measured by exhaled gases and short chain fatty acids in a randomized, parallel, controlled trial**
Period: 2018
Gitte Ravn-Haren (External examiner)
National Food Institute
Research Group for Risk-Benefit

**Description**
Master Thesis
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities
Better Training for Safer Food - Risk Assessment in Nutrition (Tallinn, Estonia)
Period: Sep 2017
Gitte Ravn-Haren (Lecturer)
National Food Institute
Research Group for Risk-Benefit

Related event

Better Training for Safer Foods
11/09/2017 → 15/09/2017
Tallinn, Estonia
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Eenæring 23732
Period: 31 Aug 2017 → 28 Nov 2017
Gitte Ravn-Haren (Lecturer)
National Food Institute
Research Group for Risk-Benefit

Description
Course
Degree of recognition: Local
Activity: Other

Better Training for Safer Food - Risk Assessment in Nutrition (Rome, Italy)
Period: Feb 2017
Gitte Ravn-Haren (Lecturer)
National Food Institute
Research Group for Risk-Benefit

Related event

Better Training for Safer Foods
06/02/2017 → 10/02/2017
Rome, Italy
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Moderate alcohol intake and blood pressure
Period: 2017
Gitte Ravn-Haren (External examiner)
National Food Institute
Research Group for Risk-Benefit

Description
Bachelor project
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

The effect of a moderate alcohol consumption on biomarkers for Type 2 Diabetes
Period: 2017
Gitte Ravn-Haren (External examiner)
National Food Institute
Research Group for Risk-Benefit

Description
Bachelor project
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

Seminar om Stressforebygelse og -håndtering
Period: 30 Nov 2016
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: Local

Related event
Seminar om Stressforebygelse og -håndtering
30/11/2016 → …
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Ernæring 23732
Period: 30 Aug 2016 → 29 Nov 2016
Gitte Ravn-Haren (Lecturer)
National Food Institute
Research Group for Risk-Benefit

Description
Course
Degree of recognition: Local
Activity: Other

UDTU Teaching and Learning, Module 1
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: National

Related event
UDTU Teaching and Learning, Module 1
08/03/2016 → 11/03/2016
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

DanThyr steering group (External organisation)
Period: 2016 → …
Gitte Ravn-Haren (Member)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: National

Related external organisation
DanThyr steering group
Activity: Membership › Membership of research networks or expert groups
Effect of Meat and Potatoes on Short-Term Appetite Feeling and Ad Libitum Energy Intake
Period: 2016
Gitte Ravn-Haren (External examiner)
National Food Institute
Research Group for Risk-Benefit

Description
Master's Thesis
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

Investigation of the consume of dietary supplements among male fitness athletes and the dietary supplements possible harmful effects
Period: 2016
Gitte Ravn-Haren (Main supervisor)
Kirsten Pilegaard (Supervisor)
National Food Institute
Research Group for Risk-Benefit

Description
Bachelor project
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

The effect of folate intake on risk of cardiovascular diseases
Period: 2016
Gitte Ravn-Haren (Main supervisor)
National Food Institute
Research Group for Risk-Benefit

Description
Bachelorprojekt
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

Ernæring 23732
Period: 1 Sep 2015 → 1 Dec 2015
Gitte Ravn-Haren (Lecturer)
National Food Institute
Research Group for Risk-Benefit

Description
Course
Degree of recognition: Local
Activity: Other

Better Traing for Safer Food - Risk Assessment in Nutrition (Berlin, Germany)
Period: Sep 2015
Gitte Ravn-Haren (Lecturer)
National Food Institute
Research Group for Risk-Benefit

Description
Berlin 14-18. september
**Related organisation**

**Better Training for Safer Food - Risk Assessment in Nutrition (Berlin, Germany)**  
Ravn-Haren, G. (Lecturer)  
Sep 2015  
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

**Seminar om Cocktail effekter**  
Period: 19 Mar 2015  
Gitte Ravn-Haren (Participant)  
National Food Institute  
Research Group for Risk-Benefit  
Degree of recognition: Local

**Related event**

**Seminar om Cocktail effekter**  
19/03/2015 → …  
Copenhagen, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Seminar om Danskernes Kostvaner**  
Period: 12 Mar 2015  
Gitte Ravn-Haren (Participant)  
National Food Institute  
Research Group for Risk-Benefit  
Degree of recognition: Local

**Related event**

**Seminar om Danskernes Kostvaner**  
12/03/2015 → …  
Kgs. Lyngby, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Better Training for Safer Food - Risk Assessment in Nutrition (Lisbon, Portugal)**  
Period: Feb 2015  
Gitte Ravn-Haren (Lecturer)  
National Food Institute  
Research Group for Risk-Benefit

**Description**  
Lisbon, Portugal 2015

**Related organisation**

**Better Training for Safer Food - Risk Assessment in Nutrition (Lisbon, Portugal)**  
Ravn-Haren, G. (Lecturer)  
Feb 2015  
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

**Acute postprandial effect of Nordic and Asian seaweed on subjective appetite sensation, appetite regulating hormone GLP-1, gastric emptying and ad libitum energy intake**  
Period: 2015  
Gitte Ravn-Haren (External examiner)  
National Food Institute
Lipid malabsorption among gastric bypass patients – focusing on vitamin A and carotenoids
Period: 2015
Gitte Ravn-Haren (External examiner)
National Food Institute
Research Group for Risk-Benefit

The effect of advanced glycation end products on type 2 diabetes mellitus etiology and diabetic nephropathy
Period: 2015
Gitte Ravn-Haren (External examiner)
National Food Institute
Research Group for Risk-Benefit

Genes, Diet and Body Weight
Period: 27 Feb 2014
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit

Samspillet mellem kost faktorer og genetiske polymorfi i antioxidant gener i forhold til risiko for brystkræft
Period: 2014 → …
Gitte Ravn-Haren (Main supervisor)
National Food Institute
Research Group for Risk-Benefit

Dansk VitaminNetværk 2013
Period: 28 Nov 2013
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit

**Related event**

*Dansk VitaminNetværk 2013*
28/11/2013 → …
Søborg, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Better Training for Safer Food - Risk Assessment in Nutrition (Berlin, Germany)**
Period: Apr 2013
Gitte Ravn-Haren (Lecturer)
National Food Institute
Research Group for Risk-Benefit

**Description**
Berlin, Germany 2013

**Related organisation**

*Better Training for Safer Food - Risk Assessment in Nutrition (Berlin, Germany)*
Ravn-Haren, G. (Lecturer)
Apr 2013
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

**Kursus, Myndighedsbetjening, Modul II**
Period: 15 Jan 2013
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit

**Related event**

*Kursus, Myndighedsbetjening, Modul II*
15/01/2013 → …
Mørkhøj, Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**European Journal of Nutrition (Journal)**
Period: 2013 → …
Gitte Ravn-Haren (Reviewer)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

**Related journal**

*European Journal of Nutrition*
1436-6207
ISI indexed (2013): ISI indexed yes
Central database
Activity: Research › Journal editor
Human Nutrition: Antioxidants in Nutrition and Health
Period: 2013
Gitte Ravn-Haren (Lecturer)
Division of Toxicology and Risk Assessment
National Food Institute

Related external organisation
Lund University
Lund, Sweden
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Nutrition Research (Journal)
Period: 2013 → …
Gitte Ravn-Haren (Reviewer)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

Related journal
Nutrition Research
0271-5317
Central database
Activity: Research › Journal editor

Arbejdsmiljøseminar "Krop og Job"
Period: 3 Dec 2012
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: Local

Related event
Arbejdsmiljøseminar "Krop og Job"
03/12/2012 → …
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Better Training for Safer Food - Risk Assessment in Nutrition (Vilnius, Lithuania)
Period: Nov 2012
Gitte Ravn-Haren (Lecturer)
National Food Institute
Research Group for Risk-Benefit

Related event
Better Training Safer Food: Risk Assessment in Nutrition
19/11/2012 → 23/11/2012
Vilnius, Lithuania
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Projektlederuddannelse for forskere
Period: 18 Sep 2012 → 21 Nov 2012
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit

**Related event**

**Projektlederuddannelse for forskere**
18/09/2012 → 21/11/2012
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Kursus: Myndighedsbetjening, Modul I**
Period: 27 Aug 2012
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit

**Related event**

**Kursus: Myndighedsbetjening, Modul I**
27/08/2012 → …
Lyngby
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Sundhedsanprisninger**
Period: 26 Jun 2012
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit

**Related event**

**Sundhedsanprisninger**
26/06/2012 → …
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**2nd International Vitamin Conference**
Period: 23 May 2012 → 25 May 2012
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

**Related event**

**2nd International Vitamin Conference: Vitamins in Foods and Supplement - Analytical Challenges in Human Nutrition**
23/05/2012 → 25/05/2012
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Dansk VitaminNetværk 2012**
Period: 11 Jan 2012
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: National

Related event
Dansk VitaminNetværk 2012
11/01/2012 → …
Søborg, Denmark
Activity: Attending an event › Participating in or organising a conference

Näringslära II: Antioxidants in Nutrition and Health
Period: 2012 → 2013
Gitte Ravn-Haren (Lecturer)
Division of Toxicology and Risk Assessment
National Food Institute

Related external organisation
Lund University
Lund, Sweden
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Dansk VitaminNetværk 2011
Period: 16 May 2011
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: National

Related event
Dansk VitaminNetværk 2011
16/05/2011 → 16/05/2011
Søborg, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Hvordan påvirker æbler og æbleprodukter vores sundhed? Resultater fra humanstudier i ISAFRUIT projektet
Period: 28 Apr 2011
Gitte Ravn-Haren (Speaker)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: National

Related event
Selskab for Ernæringsforskning - Temadage 2011
28/04/2011 → 29/04/2011
Slagelse, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Genes & Nutrition (Journal)
Period: 2011 → …
Gitte Ravn-Haren (Reviewer)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: **International**

**Related journal**

*Genes & Nutrition*

1555-8932


Indexed in DOAJ

Central database

Activity: Research › Journal editor

**International Journal for Vitamin and Nutrition Research (Journal)**

Period: 2011 → …

Gitte Ravn-Haren (Reviewer)

National Food Institute

Research Group for Risk-Benefit

Degree of recognition: **International**

**Related journal**

*International Journal for Vitamin and Nutrition Research*

0300-9831


Central database

Activity: Research › Journal editor

**PhD supervision October 2010**

Period: 1 Oct 2010

Gitte Ravn-Haren (Participant)

National Food Institute

Research Group for Risk-Benefit

Degree of recognition: **Local**

**Related event**

**PhD supervision October 2010**

01/10/2010 → 01/10/2010

Kgs. Lyngby, Denmark

Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Kursus i Pressehåndtering**

Period: 14 Sep 2010

Gitte Ravn-Haren (Participant)

National Food Institute

Research Group for Risk-Benefit

Degree of recognition: **Local**

**Related event**

**Kursus i Pressehåndtering**

14/09/2010 → …

Søborg, Denmark

Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**First International Vitamin Conference**

Period: 19 May 2010 → 21 May 2010
Gitte Ravn-Haren (Participant)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

Related event

First International Vitamin Conference
19/05/2010 → 21/05/2010
Copenhagen
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Current Trends in Human Nutrition (PhD course): Markers of oxidation and oxidative capacity
Period: 2010
Gitte Ravn-Haren (Lecturer)
Division of Toxicology and Risk Assessment
National Food Institute
Description
- methodological principles
- evidence for a relation with human health and disease
- physiological relevance and interpretation

Related external organisation

University of Copenhagen
Thorvaldsensvej 40, DK-1871 Frederiksberg C, 1871, Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Food & Nutrition Research (Journal)
Period: 2010 → …
Gitte Ravn-Haren (Reviewer)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

Related journal

Food & Nutrition Research
1654-6628
Indexed in DOAJ
Central database
Activity: Research › Journal editor

Thematic course in Human Nutrition: Selium in prostate cancer prevention
Period: 2010
Gitte Ravn-Haren (Other)
Division of Toxicology and Risk Assessment
National Food Institute

Related external organisation

University of Copenhagen
Thorvaldsensvej 40, DK-1871 Frederiksberg C, 1871, Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities
Trends in Food Science and Technology (Journal)
Period: 2010 → …
Gitte Ravn-Haren (Reviewer)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

Related journal

Trends in Food Science and Technology
0924-2244
Central database
Activity: Research › Journal editor

Bioactive components and health: Spices
Period: 2009
Gitte Ravn-Haren (Lecturer)
Division of Toxicology and Risk Assessment
National Food Institute

Related external organisation

University of Copenhagen
Thorvaldsensvej 40, DK-1871 Frederiksberg C, 1871, Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Biological Activity and Nutritional Properties of Precessed Onion Products
Period: 2009
Gitte Ravn-Haren (External examiner)
Division of Toxicology and Risk Assessment
National Food Institute

Description
PhD Thesis, María Eduvigis Roldán Marín
Activity: Examinations and supervision › External examination

Selenium supplementation and antioxidant regulation
Period: 19 Sep 2008
Gitte Ravn-Haren (Speaker)
National Food Institute
Division of Toxicology and Risk Assessment

Description
Place: European Thyroid Association. Athens Greece

Related external organisation

Unknown external organisation
Activity: Talks and presentations › Conference presentations

NuGo course
Gitte Ravn-Haren (Participant)
National Food Institute
Division of Toxicology and Risk Assessment

Description
NuGo course: "4. Hands-on course on microarray data analysis"

Place: Maastricht University, the Netherlands

Related event

NuGo course: 4th Hands-on course on microarray data analysis
22/06/2008 → 27/07/2008
Maastricht, Netherlands
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Nutrition Physiology: Selenium
Period: 2007 → 2014
Gitte Ravn-Haren (Lecturer)

Division of Toxicology and Risk Assessment

Related external organisation

University of Copenhagen
Thorvaldsensvej 40, DK-1871 Frederiksberg C, 1871 , Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Food Summer School
Period: 1 Jan 2005 → …
Gitte Ravn-Haren (Participant)

National Food Institute
Division of Toxicology and Risk Assessment

Description
Ph.D. course “FOOD Summer School: FOOD – a matter of life and death”

Place: Technical University of Denmark

Related event

Food Summer School: FOOD – a matter of life and death
01/01/2005 → …
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Korttidseffekter af selensupplementering hos mennesker.
Period: 1 Jan 2005 → …
Gitte Ravn-Haren (Speaker)

National Food Institute
Division of Toxicology and Risk Assessment

Related external organisation

Unknown external organisation
Activity: Talks and presentations › Conference presentations
**NuGo course: Diet, gut inflammation and carcinogenesis**
Period: 1 Jan 2005 → …
Gitte Ravn-Haren (Participant)

National Food Institute
Division of Toxicology and Risk Assessment

**Description**

NuGo course “Diet, gut inflammation and carcinogenesis”

Place: Lund University, Sweden

**Related event**

**NuGo course: Diet, gut inflammation and carcinogenesis**
01/01/2005 → …
Lund, Sweden
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Mutation Research (Journal)**
Period: 2005
Gitte Ravn-Haren (Reviewer)

National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

**Related journal**

**Mutation Research**
0921-8262
Local database
Activity: Research › Journal editor

**Statistics for Veterinarians**
Period: 1 Jan 2004 → …
Gitte Ravn-Haren (Participant)

National Food Institute
Division of Toxicology and Risk Assessment

**Description**

Ph.D. course “Statistics for Veterinarians”

Place: The Royal Veterinary and Agricultural University, Denmark

**Related event**

**Statistics for Veterinarians**
01/01/2005 → …
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**4th International advanced course on Chemistry and Biochemistry of antioxidants, their effects on health and disease, and risk evaluation of their use as food ingredients**
Period: 1 Jan 2003 → …
Gitte Ravn-Haren (Participant)

National Food Institute
Division of Toxicology and Risk Assessment

**Description**
Ph.D. course “4th International advanced course on Chemistry and Biochemistry of antioxidants, their effects on health and disease, and risk evaluation of their use as food ingredients”

Place: The Graduate School VLAG, Wageningen, Holland

Related event

4th International advanced course on Chemistry and Biochemistry of antioxidants, their effects on health and disease, and risk evaluation of their use as food ingredients
01/01/2003 → …
Wageningen, Netherlands
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

LCMS quadrupol and Chemstation
Period: 1 Jan 2003 → …
Gitte Ravn-Haren (Participant)
National Food Institute
Division of Toxicology and Risk Assessment

Description
LCMS quadrupol and Chemstation

Place: Agilent Technologies, Denmark

Related event

LCMS quadrupol and Chemstation
01/01/2003 → …
Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Laboratory Animal Science
Period: 1 Jan 2002 → …
Gitte Ravn-Haren (Participant)
National Food Institute
Division of Toxicology and Risk Assessment

Description
Laboratory Animal Science

Place: University of Copenhagen, Denmark

Related event

Laboratory Animal Science 2002
02/09/2002 → 01/10/2002
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Toxicology
Period: 1 Jan 2002 → …
Gitte Ravn-Haren (Participant)
National Food Institute
Division of Toxicology and Risk Assessment

Description
Ph.D. course in Toxicology

Place: University of Copenhagen, Denmark
Related event

**Toxicology**

01/01/2002 → …
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

European Journal of Haematology (Journal)

Period: 2002
Gitte Ravn-Haren (Reviewer)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

Related journal

European Journal of Haematology
0902-4441
Central database
Activity: Research › Peer review of manuscripts

**Oxidative stress**

Period: 1 Jan 2001 → …
Gitte Ravn-Haren (Participant)
National Food Institute
Division of Toxicology and Risk Assessment

Description
Ph.D. course “Oxidative stress: measurement of oxidative damage and defence”

Place: University of Copenhagen, Denmark

Related event

**Oxidative stress: Measurement of oxidative damage and defence**
01/01/2001 → …
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Press clippings:

**Energidrikken Cult**
Gitte Ravn-Haren
04/05/2018
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

**Energidrikken Cult**
04/05/2018
DR Kontakt (National), Denmark, Television
Sofie Skødts Mortensen
Gitte Ravn-Haren
National Food Institute, Research Group for Risk-Benefit
Press/Media: Press / Media
Æbler
Gitte Ravn-Haren
09/09/2014

Subject
Æbler
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Æbler
09/09/2014
DR, Madmagasinet Bitz & Frisk, Television
Frederik Wiese
Gitte Ravn-Haren
National Food Institute, Division of Toxicology and Risk Assessment
Press/Media: Press / Media

Æbler
Gitte Ravn-Haren
18/10/2012
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Æbler
18/10/2012
Fagbladet 3F, Print
Louise Thomsen
Gitte Ravn-Haren
National Food Institute, Division of Toxicology and Risk Assessment
Press/Media: Press / Media

Æbler
Gitte Ravn-Haren
06/09/2012
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Æbler
06/09/2012
Kristeligt Dagblad, Print
Annette Hagerup
Gitte Ravn-Haren
National Food Institute, Division of Toxicology and Risk Assessment
Press/Media: Press / Media