



Oncology Association of Naturopathic Physicians Research Review February 2012

Contributing Editors: Davis Lamson and Jacob Schor

Beginning in 2008, Davis Lamson and I have attempted to compile research abstracts to share with OncANP members on subjects that we feel may be relevant to the practice of naturopathic oncology. Initially we attempted to publish these collections monthly. Over the past year neither of us have kept up with this schedule. With this issue we hope to resume the practice but on a quarterly schedule of publication rather than monthly. In past years we have had an arrangement with the Oregon Board that those who read through the material and proved it by answering a simple questionnaire would qualify for continuing education hours. If you would like us to again make the extra effort to offer CE hours, please contact Corey Harmon: oncancp@gmail.com

Speaking for myself, (this is Jacob writing here) I must mention that although producing this review has at times been something of a chore, it has given me the opportunity to become better acquainted with Davis Lamson and this has been a great honor and pleasure. While his breadth of knowledge has often left me in awe, Dr. Lamson's commitment to sharing this knowledge with our profession and in particular our association leaves me humbled. His recognition of the potential value this knowledge has in reducing the suffering of our patients, is the driving force that animates our communications. I have been very lucky to have volunteered to help write these things.

Dr. Lamson and I communicate quite often and a fair percentage of these communiqués are suggestions from him to me of new projects that members of OncANP could and should engage in. Dear Davis is obsessed with finding better ways for us to better keep up with and spread the knowledge of naturopathic oncology. Most of my responses center on my making excuses for why we haven't already accomplished past suggestions. Kind of along the line of, "Davis, there isn't enough time in the day....." They are good ideas, I tell him, but I can't do anything more.....

My goal for the coming year is to create a structure that will aid Dr. Lamson in turning these suggestions into actual reality; I want to find a way that members of our association

can easily step up and take on some of these projects that our dear friend Davis keeps thinking up. So watch for, in the coming months, some sort of project volunteer board, where each of you can step up to be a Lamson flunky, the way I have, and suddenly have more 'homework' than you can keep up with. While it's tempting to want to hog all of 'the work' for myself, it's only fair that I share some of it.

Jacob Schor
January 28, 2012
Denver, CO

In the meantime, we offer you this, the first research review of 2012:

1. **Aspirin and cancer: has aspirin been overlooked as an adjuvant therapy?**

Br J Cancer. 2011 Oct 11;105(8):1107-13. PMID: 21847126

Comment in

Br J Cancer. 2011 Oct 11;105(8):1105-6.

Aspirin inhibits the enzyme cyclooxygenase (Cox), and there is a significant body of epidemiological evidence demonstrating that regular aspirin use is associated with a decreased incidence of developing cancer. Interest focused on selective Cox-2 inhibitors both as cancer prevention agents and as therapeutic agents in patients with proven malignancy until concerns were raised about their toxicity profile. Aspirin has several additional mechanisms of action that may contribute to its anti-cancer effect. It also influences cellular processes such as apoptosis and angiogenesis that are crucial for the development and growth of malignancies. Evidence suggests that these effects can occur through Cox-independent pathways questioning the rationale of focusing on Cox-2 inhibition alone as an anti-cancer strategy. Randomized studies with aspirin primarily designed to prevent cardiovascular disease have demonstrated a reduction in cancer deaths with long-term follow-up. Concerns about toxicity, particularly serious hemorrhage, have limited the use of aspirin as a cancer prevention agent, but recent epidemiological evidence demonstrating regular aspirin use after a diagnosis of cancer improves outcomes suggests that it may have a role in the adjuvant setting where the risk:benefit ratio will be different.

PMID: 21847126 [PubMed - indexed for MEDLINE]

EDITOR COMMENT: The full publication is available on request to the editors. The paper excellently outlines the history of research on aspirin with respect to reducing onset of and treatment of cancer, from the early implications in 1968 to highly indicative animal studies in 1972 and '73, all in one-quarter page. There was no follow up of the findings with human trials and 15 years elapsed before epidemiologic studies of cancer prevention were available. The two recent epidemiologic studies, mentioned above and demonstrating that aspirin use after cancer diagnosis improved outcome, suggests that we in the OncANP should as a group seriously examine the potential of including aspirin in our therapeutic

regimens. It has is a complexity of mechanism that is appealing in its broadness. There is the question about potential gastric difficulty from aspirin in persons with weakened tissue from cancer or chemotherapy. We might investigate the possibility of administration by patches of methyl salicylate (wintergreen), which becomes salicylate (the active product of aspirin) in the tissue. A collection of papers relating to aspirin and cancer is available from the editors.

The Natural Medicine Journal published a review by one of us last December looking at this in some detail: http://naturalmedicinejournal.com/article_content.asp?article=271

2. Omega-3 polyunsaturated fatty acids for the treatment and prevention of colorectal cancer.

Gut. 2012 Jan;61(1):135-49. PMID: 21490374.

Omega - 3 polyunsaturated fatty acids (PUFAs) are naturally occurring substances that are well tolerated and have been used extensively for the prevention of cardiovascular disease. More recently, omega-3 PUFAs have been recognized to have anticancer activity. There is also evidence suggesting improved efficacy and/or tolerability of conventional cancer chemotherapy when administered with omega-3 PUFAs. The purpose of this review is to (i) describe the mechanisms by which omega-3 PUFAs are thought to have antineoplastic activity, (ii) review published preclinical and clinical studies that support anti-colorectal cancer activity and (iii) summarise current clinical trials investigating the potential therapeutic role(s) of omega -3 PUFAs at different stages of colorectal carcinogenesis, from adenoma (polyp) prevention to treatment of established malignant disease and prevention of cancer recurrence.

PMID: 21490374 FREE DOWNLOAD: <http://www.ncbi.nlm.nih.gov/pubmed/21490374>

EDITOR COMMENT: While all in the OncANP are aware of the potential benefits of omega-3 PUFAs in cancer situations, this publication is a good example of when a promising agent is used long enough, someone writes a creditable review. So it is encouraged that the membership study this review. It is also a reminder that we cannot wait for others to write the well-referenced review we need on every agent useful in naturopathic oncology. Some of these we may have to write ourselves and share. Please keep continually in mind that OncANP must create an archive of information required for practice of naturopathic oncology. Each of us must accept some responsibility for the common good.

3. Hepatocellular carcinoma and vitamin D: a review.

J Gastroenterol Hepatol. 2011 Nov;26(11):1597-603. PMID: 21880026

The non-classical actions of vitamin D, namely antiproliferation, pro-differentiation, pro-apoptosis, anti-inflammation, and immune regulation, have received great attention during the past decade. Increasing evidence from epidemiological studies showing the inverse association between vitamin D status and incidence of many forms of cancer as well as

biochemical studies has suggested that vitamin D deficiency may play a role in the cause and progression of these types of cancer. Recently, vitamin D and its analogs have been deemed as potential regimen to treat a variety of cancers alone or in combination with other drugs. Although, the epidemiologic evidence regarding the association of vitamin D and hepatocellular carcinoma (HCC) is still inconclusive, biochemical evidence clearly indicates that HCC cells are responsive to the inhibitory effect of vitamin D and its analogs. In this review, we discuss the current status of HCC and its treatment, the source, metabolism, functions, and the mechanism of actions of vitamin D, and the biochemical studies of vitamin D analogs and their implications in the prevention and treatment of HCC. -© 2011 Journal of Gastroenterology and Hepatology Foundation and Blackwell Publishing Asia Pty Ltd.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21880026>

FREE DOWNLOAD: <http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1746.2011.06892.x/full>

EDITOR COMMENT: This is recommended reading because it contains both a good diagram of the mechanism of actions of vitamin D and also a summary of current allopathic treatment of hepatocellular carcinoma.

4. Association between vitamin D and risk of colorectal cancer: a systematic review of prospective studies.

J Clin Oncol. 2011 Oct 1;29(28):3775-82. PMID: 21876081

PURPOSE: To conduct a systematic review of prospective studies assessing the association of vitamin D intake or blood levels of 25-hydroxyvitamin D [25(OH)D] with the risk of colorectal cancer using meta-analysis.

METHODS: Relevant studies were identified by a search of MEDLINE and EMBASE databases before October 2010 with no restrictions. We included prospective studies that reported relative risk (RR) estimates with 95% CIs for the association between vitamin D intake or blood 25(OH)D levels and the risk of colorectal, colon, or rectal cancer.

Approximately 1,000,000 participants from several countries were included in this analysis.

RESULTS: Nine studies on vitamin D intake and nine studies on blood 25(OH)D levels were included in the meta-analysis. The pooled RRs of colorectal cancer for the highest versus lowest categories of vitamin D intake and blood 25(OH)D levels were 0.88 (95% CI, 0.80 to 0.96) and 0.67 (95% CI, 0.54 to 0.80), respectively. There was no heterogeneity among studies of vitamin D intake ($P = .19$) or among studies of blood 25(OH)D levels ($P = .96$). A 10 ng/mL increment in blood 25(OH)D level conferred an RR of 0.74 (95% CI, 0.63 to 0.89).

CONCLUSION: Vitamin D intake and blood 25(OH)D levels were inversely associated with the risk of colorectal cancer in this meta-analysis.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21876081>

EDITOR COMMENT: Included just as a recent reminder.

5. Systematic review: generating evidence-based guidelines on the concurrent use of dietary antioxidants and chemotherapy or radiotherapy.

Cancer Invest. 2011;29(10):655-67. PMID: 22085269

The risk-benefit ratio for concurrent use of dietary antioxidants with chemotherapy or radiation therapy is a controversial topic. In this review, the medical literature on concurrent antioxidant use with chemotherapy or radiotherapy was assessed and further steps for generating evidence-based guidelines are suggested. The clinical cancer research community should cooperate and focus new studies on the use of a specific combination of antioxidant and chemotherapy or radiotherapy, and determine optimal doses for a specific cancer setting. Mechanistic studies on the interaction between antioxidants and conventional cancer therapy could lead to novel biomarkers for assessing dose adequacy. Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/22085269>

EDITOR COMMENT: Perhaps some applause is appropriate for the abstract wording alone. This is apparently an honest effort by workers at the National Cancer Institute and specifically discusses studies on glutathione, vitamin E, and N-acetylcysteine. A full copy may be obtained for member examination. This paper study follows hard on the heels of our colleague Heather Greenlee's September 2011 paper in Cancer that suggested the use of certain antioxidant vitamins by breast cancer patients lowered risk of mortality. Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21953120>

This is in contrast to a paper Dr Greenlee co-authored with Michelle Kwan that was published in November that suggests multi-vitamin use by breast cancer patients produced an insignificant benefit. See Abstract 8 below.

6. The use of Chinese herbal medicine to improve quality of life in women undergoing chemotherapy for ovarian cancer: a double-blind placebo-controlled randomized trial with immunological monitoring.

Ann Oncol. 2011 Oct;22(10):2241-9. PMID: 21355071

BACKGROUND: This study aimed to evaluate traditional Chinese medicine (TCM) in improving quality of life (QOL), reducing chemotoxicity and modulating immune function in patients undergoing chemotherapy.

PATIENTS AND METHODS: Patients with ovarian cancer were randomized to receive either TCM or placebo in addition to standard chemotherapy. The primary outcome was global health status (GHS) score, assessed by European Organization for Research and Treatment of Cancer questionnaire, while the secondary outcomes were other QOL items, chemotoxicity according to World Health Organization criteria and alterations in immune function as measured by immune cells count and the numbers of cytokines-secreting cells.

RESULTS: There was no significant difference in the GHS between the two groups. With adjustment for stage, chemotherapy type, disease status, age and baseline value, emotional function, cognitive function and nausea and vomiting were found to be worse or less improved in the TCM group compared with placebo group after six cycles of chemotherapy. The TCM group had less neutropenia after three cycles (0% grade 4 neutropenia versus 28.6%). There were no other significant differences in terms of chemotoxicity. Lymphocyte counts and cytokine activities decreased less in the TCM group.

CONCLUSIONS: TCM did not improve QOL but did have some effects in terms of maintaining immune function.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21355071>

EDITOR COMMENT: When immune cell populations are seriously reduced by chemotherapy, it is frequently difficult to raise them. We need those in the OncANP with TCM experience to document this for us. Copy of the publication available from the editors on request.

7. Consumption of salmon v. salmon oil capsules: effects on n-3 PUFA and selenium status.

Br J Nutr. 2011 Oct;106(8):1231-9. PMID: 21736825

Salmon provides long-chain (LC) n-3 PUFA and Se, which are well recognised for their health benefits. The n-3 and Se status of the New Zealand population is marginal. The objective of the present study was to compare the effects of consuming salmon v. supplementation with salmon oil on LC n-3 and Se status. Healthy volunteers (n 44) were randomly assigned to one of four groups consuming 2 × 120 g servings of salmon/week or 2, 4 or 6 salmon oil capsules/d for 8 weeks. Linear regression analysis predictive models were fitted to the capsule data to predict changes in erythrocyte LC n-3 levels with intakes of LC n-3 from capsules in amounts equivalent to that consumed from salmon. Changes in Se status (plasma Se and whole-blood glutathione peroxidase) were compared between the groups consuming salmon and capsules (three groups combined). Salmon, 2, 4 and 6 capsules provided 0.82, 0.24, 0.47 and 0.69 g/d of LC n-3 fatty acids. Salmon provided 7 µg/d and capsules < 0.02 µg/d of Se. The predictive model (r^2 0.31, $P = 0.001$) showed that increases in erythrocyte LC n-3 levels were similar when intakes of 0.82 g/d LC n-3 from salmon or capsules (1.92 (95 % CI 1.35, 2.49) v. 2.32 (95 % 1.76, 2.88) %) were consumed. Plasma Se increased significantly more with salmon than with capsules (12.2 (95 % CI 6.18, 18.12) v. 1.57 (95 % CI - 2.32, 5.45) µg/l, $P = 0.01$). LC n-3 status was similarly improved with consumption of salmon and capsules, while consuming salmon had the added benefit of increasing Se status. This is of particular relevance to the New Zealand population that has marginal LC n-3 and Se status.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21736825>

EDITOR COMMENT: Occasionally a patient asks if they can eat fish instead of the recommended cold-water fish oil. This publication seems to give an estimate of

equivalence. It would seem that eating about half a pound of salmon per week is equivalent to taking daily capsules.

8. Multivitamin use and breast cancer outcomes in women with early-stage breast cancer: the Life After Cancer Epidemiology study.

Breast Cancer Res Treat. 2011 Nov;130(1):195-205. PMID: 21559824

Little is known about the relation of multivitamin use to breast cancer outcomes. 2,236 women diagnosed from 1997 to 2000 with early-stage breast cancer (Stage I, \leq 1 cm, II, or IIIA) were enrolled about 2 years post-diagnosis, primarily from the Kaiser Permanente Northern California Cancer Registry (83%). Multivitamin use pre-diagnosis and post-diagnosis was assessed via mailed questionnaire. Outcomes were ascertained yearly by self-report and verified by medical record review. Delayed-entry Cox proportional hazards models were used to estimate hazard ratios (HR) and 95% confidence intervals (CI), adjusting for sociodemographic, tumor, and lifestyle factors. Overall, 54 and 72% of the cohort reported using multivitamins pre- and post-diagnosis, respectively. A total of 380 recurrences, 212 breast cancer deaths, and 396 total deaths were confirmed. Compared to never use, multivitamin use after diagnosis was not associated with any outcome (recurrence HR = 0.92; 95% CI: 0.71, 1.20; total mortality HR = 0.92; 95% CI: 0.71, 1.19). Compared to never use, persistent use of multivitamins from pre- to post-diagnosis was associated with a non-significant decreased risk of recurrence (HR = 0.76; 95% CI: 0.54, 1.06) and total mortality (HR = 0.79; 95% CI: 0.56, 1.12). The protective associations were limited to women who had been treated by radiation only (P for trend = 0.048 and 0.083 for recurrence and total mortality, respectively) and both radiation and chemotherapy (P for trend = 0.015 and 0.095 for recurrence and total mortality, respectively). In stratified analyses, women who consistently used multivitamins before and after diagnosis and ate more fruits/vegetables (P for trend = 0.008) and were more physically active (P for trend = 0.034) had better overall survival. Multivitamin use along with practice of other health-promoting behaviors may be beneficial in improving breast cancer outcomes in select groups of survivors.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21559824>

EDITOR COMMENT: This one has already made the rounds, but it does show that multivitamin (and presumably mineral) supplements do not increase recurrence or mortality after early breast cancer treatment. The comment is interesting, but not unexpected, that those who took supplements had better diet and more exercise.

9. Effect of valerian on sleep quality in postmenopausal women: a randomized placebo-controlled clinical trial.

Menopause. 2011 Sep;18(9):951-5. PMID: 21775910

OBJECTIVE: Sleep disturbances reduce the quality of life. About 50% of postmenopausal women experience sleep disturbances such as insomnia. Complementary and alternative

medical therapies may be useful for the management of sleep disturbances among postmenopausal women. The aim of the present study was to evaluate the effects of valerian extract taken nightly on the improvement of sleep quality in postmenopausal women experiencing insomnia.

METHODS: A randomized, triple-blind, controlled trial design was used for this study. Participants consisted of 100 postmenopausal women aged 50 to 60 years who were experiencing insomnia. A demographic data form and the Pittsburgh Sleep Quality Index were used to collect data. The women were randomly divided into two groups. Each group received either 530 mg of concentrated valerian extract or a placebo twice a day for 4 weeks. Descriptive and inferential statistics were used to analyze the data.

RESULTS: A statistically significant change was reported in the quality of sleep of the intervention group in comparison with the placebo group ($P < 0.001$). Also, 30% of the participants in the intervention group and 4% in the placebo group showed an improvement in the quality of sleep ($P < 0.001$).

CONCLUSIONS: Valerian improves the quality of sleep in women with menopause who are experiencing insomnia. Findings from this study add support to the reported effectiveness of valerian in the clinical management of insomnia.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21775910>

EDITOR COMMENT: While Valerian may solve the sleep problems of many cancer patients, remember that a search of PubMed will show that inhibition of CYP 450 enzymes can occur and should be considered for those still receiving chemotherapy. Our readers are aware that magnesium may help reduce frequency and intensity of hotflashes in women on hormone therapy for breast cancer. Park et al reported on magnesium last June. Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21271347>

10. Digitized assessment of mammographic breast density--effects of continuous combined hormone therapy, tibolone and black cohosh compared to placebo.

Maturitas. 2011 Dec;70(4):361-4. PMID: 21958943

OBJECTIVES: To determine the effects of continuous combined hormone therapy, tibolone, black cohosh, and placebo on digitized mammographic breast density in postmenopausal women.

STUDY DESIGN: A prospective, double-blind, placebo-controlled study of 154 postmenopausal women randomized to estradiol 2 mg/norethisterone acetate 1 mg (E2/NETA), tibolone 2.5 mg or placebo and a prospective, open, uncontrolled drug safety study, of which 65 postmenopausal women were treated with black cohosh. Mammograms, at baseline and after six months of treatment, were previously classified according to visual quantification scales.

MAIN OUTCOME MEASURES: Reanalysis of assessable mammograms by digitized quantification of breast density.

RESULTS: Treatment groups were comparable at baseline. During treatment, both E2/NETA and tibolone significantly increased breast density (mean increase 14.3%,

p<0.001 and 2.3%, p<0.001, respectively), while black cohosh and placebo did not. Twenty-four out of the 43 women on E2/NETA had an increase in density exceeding 10% and 6 women had an increase of 30% or more. In the tibolone group, only one woman had an increase in density of more than 10%. The difference in increase in breast density between E2/NETA on the one hand and tibolone, black cohosh and placebo on the other was highly significant (p<0.0001).

CONCLUSIONS: Digitized mammographic breast density is a highly sensitive method confirming significant increase in density by standard E2/NETA treatment and to a lesser extent by tibolone, whereas black cohosh does not influence mammographic breast density during six months treatment. Digitized assessment also yields data on individual variation and small increases left undetectable by visual classification.

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Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/21958943>

EDITOR COMMENT: Presumably this demonstrates that agents that simulate estrogen can increase breast density and black cohosh does not increase density, although it can relieve estrogen deficient symptoms. A quick survey of PubMed suggests that Cimicifuga has no effect on CYP 3A4 or another CYP (PMID: 19353999 and PMID: 18214849).

11. Maca (*Lepidium meyenii*) for treatment of menopausal symptoms: A systematic review.

Maturitas. 2011 Nov;70(3):227-33. PMID: 21840656

Maca (*Lepidium meyenii*), an Andean plant of the brassica (mustard) family has been used for centuries in the Andes as an adaptogenic plant to manage anemia, infertility and female hormone balance. The aim of this review was to assess the evidence for and against the effectiveness of the maca plant as a treatment for menopausal symptoms. We searched 17 databases from their inception up to June 2011 and included all randomized clinical trials (RCTs) that compared any type of maca-based intervention to a placebo for the treatment of menopausal symptoms. All studies were assessed for methodological quality using the Cochrane 'risk of bias' assessment tool. Four RCTs met all inclusion criteria. These RCTs tested the effects of maca on menopausal symptoms in healthy perimenopausal, early postmenopausal, and late postmenopausal women. Using the Kupperman Menopausal Index and the Greene Climacteric Score, all RCTs demonstrated favorable effects of maca. There have been very few rigorous trials of maca for menopausal symptoms. The results of our systematic review provide limited evidence for the effectiveness of maca as a treatment for menopausal symptoms. However, the total number of trials, the total sample size, and the average methodological quality of the primary studies, were too limited to draw firm conclusions. Furthermore, the safety has not been proved yet. Therefore, the efficacy and safety should be tested in larger studies.

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<http://www.ncbi.nlm.nih.gov/pubmed/21840656>

EDITOR COMMENT: In using botanicals to reduce estrogen deficiency symptoms we need to be concerned not only with CYP 450 effects, but also the possibility of estrogen promoting effects such as would be produced by DHEA.

12. Soy extracts versus hormone therapy for reduction of menopausal hot flashes: indirect comparison.

Menopause. 2011 Jul;18(7):825-9. PMID: 21358349

Bolaños-Díaz R, Zavala-Gonzales JC, Mezones-Holguín E, Francia-Romero J. San Marcos

OBJECTIVE: The aim of this study was to make an indirect comparison of the results from meta-analyses that evaluated the severity of hot flashes in postmenopausal women exposed to hormone therapy (HT) or soy extracts.

METHODS: A systematic review and meta-analysis of HT and soy extracts related to the reduction of hot flashes in postmenopausal women versus the same control (placebo) were conducted. In addition, the combination of the overall results obtained from these two meta-analyses (indirect comparison) was adjusted to the common control (placebo).

RESULTS: The indirect standardized mean difference (SMD) obtained from the combination of both individual meta-analyses was calculated by using the following equation: $SMD(\text{indirect SOY vs HT}) = SMD(\text{soy}) - SMD(\text{HT})$, with a total indirect variance (var) equivalent to the following equation: $\text{var}(\text{total}) = \text{var}(\text{soy}) + \text{var}(\text{HT})$. These calculations yielded a point estimate of -0.84 (95% CI, -1.33 to -0.35) for the indirect SMD favorable to HT.

CONCLUSIONS: HT and soy interventions showed a significant difference in efficacy for the reduction of hot flashes in postmenopausal women when each treatment was compared with placebo. However, using indirect comparison, there is a statistically significant difference between HT and soy extracts in their effects on hot flashes.

<http://www.ncbi.nlm.nih.gov/pubmed/21358349>

13. Patterns of meat intake and risk of prostate cancer among African-Americans in a large prospective study.

Cancer Causes Control. 2011 Dec;22(12):1691-8. PMID: 21971816

Given the large racial differences in prostate cancer risk, further investigation of diet and prostate cancer is warranted among high-risk groups. The purpose of this study was to examine the association between type of meat intake and prostate cancer risk among African-American men.

METHODS:

In the large, prospective NIH-AARP Diet and Health Study, we analyzed baseline (1995-1996) data from African-American participants, aged 50-71 years. Incident prostate cancer cases (n = 1,089) were identified through 2006. Dietary and risk factor data were ascertained by questionnaires administered at baseline. Cox models were used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) within intake quantiles.

RESULTS: Neither white nor processed meat intake was associated with prostate cancer, regardless of meat-cooking method. Red meats cooked at high temperatures were associated with an increased risk of prostate cancer (HR = 1.18, 95% CI = 1.00-1.38 and HR = 1.22, 95% CI = 1.03-1.44, for the upper two intake tertiles). Intake of the heterocyclic amine (HCA), 2-amino-3,4,8-trimethylimidazo[4,5-f] quinoxaline (DiMeIQx) was positively associated with prostate cancer (HR = 1.30; 95% CI = 1.05-1.61, p = 0.02). No associations were observed for intake of other HCAs.

CONCLUSION: Red meats cooked at high temperatures were positively associated with prostate cancer risk among African-American men. Further studies are needed to replicate these findings.

EDITOR COMMENT: This is “old hat”, but gives a new reference to quote to men who ask about preventing prostate cancer. This contrasts though with Richman et al that suggests that chicken skin and eggs play a much larger role in causing PC recurrence than red meat does. [abstract: <http://www.ncbi.nlm.nih.gov/pubmed/20042525>]