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Nutrition Update

When reading reports on new research, it is important to remember that no single study should be seen as providing the whole truth. The following reports offer helpful clues but in most cases further research is needed before firm conclusions can be drawn.

Eggs or Poultry with Skin Worsen Prognosis for Those with Prostate Cancer

Processed meat and fish have been shown to be associated with the risk of advanced prostate cancer, but few studies have examined diet after prostate cancer diagnosis and risk of its progression. Researchers at the Harvard School of Public Health examined the association between postdiagnostic consumption of processed and unprocessed red meat, fish, poultry, and eggs and the risk of prostate cancer recurrence or progression. They conducted a prospective study in 1294 men with prostate cancer, without recurrence or progression, who were participating in the Cancer of the Prostate Strategic Urologic Research Endeavor and who were followed for an average of 2 years.

The investigators observed 127 events (prostate cancer death or metastases, elevated prostate-specific antigen concentration, or secondary treatment) during 2610 person-years. Intakes of processed and unprocessed red meat, fish, total poultry, and skinless poultry were not associated with prostate cancer recurrence or progression. Greater consumption of eggs and poultry with skin was associated with 2-fold increases in risk in a comparison of extreme quantiles. An interaction was observed between prognostic risk at diagnosis and poultry. Men with high prognostic risk and a high poultry intake had a 4-fold increased risk of recurrence or progression compared with men with low/intermediate prognostic risk and a low poultry intake. The researchers concluded that their results suggest that the postdiagnostic consumption of processed or unprocessed red meat, fish, or skinless poultry is not associated with prostate cancer recurrence or progression, whereas consumption of eggs and poultry with skin may increase the risk.

Richman EL, Stampfer MJ, Paciorek A, Broering JM, Carroll PR, Chan JM. Intakes of meat, fish, poultry, and eggs and risk of prostate cancer progression. *Am J Clin Nutr.* Mar 2010;91(3):712-721.

Processed but Not Red Meat Associated with Higher Risk of Heart Disease and Diabetes

Researchers at the Harvard School of Public Health performed a systematic review and meta-analysis of evidence for relationships of red (unprocessed), processed, and total meat consumption with incident coronary heart disease (CHD), stroke, and diabetes mellitus. They searched for any cohort study, case-control study, or randomized trial that assessed these exposures and outcomes in generally healthy adults. Of 1598 identified abstracts, 20 studies met inclusion criteria, including 17 prospective cohorts and 3 case-control studies. The 20 studies included 1,218,380 individuals and 23,889 CHD, 2280 stroke, and 10,797 diabetes mellitus cases. Red meat intake was not associated with CHD or diabetes mellitus.

Conversely, processed meat intake was associated with 42% higher risk of CHD and 19% higher risk of diabetes mellitus. Associations were intermediate for total meat intake. Consumption of red and processed meat were not associated with stroke, but only 3 studies evaluated these relationships. The researchers concluded that consumption of processed meats, but not red meats, is associated with higher incidence of CHD and diabetes mellitus. These results highlight the need for better understanding of potential mechanisms of effects and for particular focus on processed meats for dietary and policy recommendations.

Micha R, Wallace SK, Mozaffarian D. Red and Processed Meat Consumption and Risk of Incident Coronary Heart Disease, Stroke, and Diabetes Mellitus. A Systematic Review and Meta-Analysis. *Circulation.* May 17 2010.

Vitamin E and Evening Primrose Oil May Help Cyclical Breast Pain

A double-blind, randomized, placebo-controlled trial was conducted at two U.S. academic medical centers to evaluate the effectiveness of vitamin E, evening primrose oil (EPO), and the combination of vitamin E and EPO for pain control in women with cyclical mastalgia (breast pain). Eighty-five women with premenstrual cyclical breast discomfort were enrolled. Participants were randomly assigned to one of four six-month oral treatments: vitamin E (1,200 IU per day), EPO (3,000 mg per day), vitamin E (1,200 IU per day) plus EPO (3,000 mg per day), or double placebo. The primary outcome measure was change in breast pain, measured by the modified McGill Pain Questionnaire at enrollment and at six months.

Forty-one patients completed the study. Intent-to-treat analysis (pretesting and post testing) showed a difference in worst-pain improvement with the treatments EPO, vitamin E, and EPO plus vitamin E, but no difference with placebo. There was a nonsignificant decrease in cyclical mastalgia individually for the three treatment groups compared with the placebo group. The data were also analyzed with the separation test by Aickin, which showed a trend toward a reduction of cyclical mastalgia with vitamin E and EPO individually and in combination. The researchers concluded that daily doses of 1,200 IU vitamin E, 3,000 mg EPO, or vitamin E and EPO in combination at these same dosages taken for six months may decrease the severity of cyclical mastalgia.

Pruthi S, Wahner-Roedler DL, Torkelson CJ, et al. Vitamin E and evening primrose oil for management of cyclical mastalgia: a randomized pilot study. *Altern Med Rev.* Apr 2010;15(1):59-67.

Increased Protein Intake, Especially from Meat, Worsens Bone Development in Pre-Pubertal Girls Low in Calcium

To assess the association between protein intakes and bone mass accrual in girls, data were analyzed for 757 pre-pubertal girls (mean age 10.1 years) in urban Beijing, China, who participated in a 5-year study including 2 years of milk supplementation (intervention groups only) and 3 years of follow-up study. At 0, 12, 24, 48 and 60 months from the baseline, bone mass of the proximal or distal forearm (PF or DF) and total body (TB) was measured with dual energy X-ray absorptiometry; dietary intakes were assessed by a 3-day food record (including two weekdays and one weekend day). The mean longitudinal calcium intake (432-675 mg/d on average) positively influenced bone mineral content (BMC) at TB, PF and DF after controlling for baseline bone mass and other possible confounders. However, negative associations were observed between protein intake (55.9-61.0 g/d on average) and BMC accrual at TB, PF or DF after adjustment. When protein intake was considered according to animal or plant food sources, protein from animal foods, particularly meat, had significant negative effects on BMC accrual at DF or PF after adjustment. It was concluded that higher protein intake, especially from animal foods, appeared to have a negative effect on bone mass accrual in Chinese pubertal girls with low calcium intakes.

Zhang Q, Ma G, Greenfield H, et al. The association between dietary protein intake and bone mass accretion in pubertal girls with low calcium intakes. *Br J Nutr.* Mar 2010;103(5):714-723.

